CORRECTIVE ACTION PROCESS REPORT/PLAN COVER SHEET

CHAPTER 245 - STORAGE TANK AND SPILL PREVENTION ACT

Storage Tank Facility ID #: 51-33624

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Media of Concern: [X] **Soil** [ ] **Groundwater**

Contaminant(s) (*e.g. unleaded gasoline*)**:** petroleum products

(check <u>all</u> that apply to the enclosed submission)

- [ ] **Remedial Action Progress Report**
- [ ] **Risk Assessment Report** (***e.g. vapor intrusion, ecological, or human health risk calculations***)
- [ ] **Site Characterization Report – Section 245.310(b)**
  - [ ] Residential [ ] Nonresidential
- [ ] **Site Characterization Report – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Site Characterization Report – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Plan – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Plan – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Completion Report – Statewide Health or Background Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Remedial Action Completion Report – Site Specific Standard**
  - [ ] Residential [ ] Nonresidential
- [ ] **Post Remediation Care Report**
- [ ] **Environmental Covenant**
  - [ ] Draft [ ] Final
- [X] **Other:** Release Investigation Report - No Impacts

FINAL

Release Investigation Report – Tank Group 06 and Tank Group 07

Former Philadelphia Energy Solutions Refinery
3144 West Passyunk Avenue
Philadelphia, Pennsylvania
Incident #s 58434 and 57973

Prepared for

Bellwether District Holdings, LLC
3144 West Passyunk Avenue
Philadelphia, Pennsylvania

Prepared by

Terraphase Engineering Inc.
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November 2025

Project Number P044.001.002

terraphase engineering

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Acronyms and Abbreviations

12DBA	1,2-dibromoethane
12DCA	1,2-dichloroethane
124TMB	1,2,4-trimethylbenzene
135TMB	1,3,5-trimethyl benzene
25 Pa. Code	Title 25 Pennsylvania Code
Act 2	Pennsylvania Land Recycling and Environmental Remediation Standards Act
Act 32	Storage Tank and Spill Prevention Act
AOI	Area of Interest
Aquaterra	Aquaterra Technologies Inc.
AST	aboveground storage tank
ASTM	American Society for Testing and Material
BDH	Bellwether District Holdings, LLC
bgs	below ground surface
BaA	benzo(a)anthracene
BaP	benzo(a)pyrene
BbF	benzo(b)fluoranthene
BghiP	benzo(g,h,i)perylene
CO&A	Consent Order & Agreement
COC	constituent of concern
CP	cleanup plan
CQ	ChemQuants
DC	direct contact
ENTACT	ENTACT, LLC
Evergreen	Evergreen Resources Group, LLC; includes Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) n/k/a Sunoco (R&M), LLC n/k/a Energy Transfer (R&M), LLC and Evergreen collectively referred to as “Evergreen”
Facility	former Philadelphia Energy Solutions refinery facility
FCC	Fluid Catalytic Cracking
ft	feet or foot
Geosyntec	Geosyntec Consultants
GW	groundwater
HHRA	human health risk assessment
Indeno	indeno(1,2,3-cd)pyrene
JD2	JD2 Environmental, Inc.
LNAPL	light non-aqueous phase liquid

mg/kg	milligram per kilogram
MGP	manufactured gas plant
MSC	medium-specific concentration
MTBE	methyl tert-butyl ether
Non-Res	non-residential
NorthStar	Northstar Contracting Group, Inc.
NWI	National Wetlands Inventory
PADEP	Pennsylvania Department of Environmental Protection
PESRM	Philadelphia Energy Solutions Refining and Marketing LLC
PID	photoionization detector
PAH	polycyclic aromatic hydrocarbon
Ransom	Ransom Consulting, LLC
RAP	Remedial Action Plan
RACR	Remedial Action Completion Report
Report	*Release Investigation Report – Tank Group 06 and 07*
RI	remedial investigation
RIR	Remedial Investigation Report
RL	reporting limit
RPD	relative percent difference
Sanborn Head	Sanborn, Head & Associates, Inc.
SCLR	Site Characterization Letter Report
SCR	Site Characterization Report
SGW	soil-to-groundwater
SHS	Statewide Health Standard
the Site	Tank Group 06 and 07 location within the former Philadelphia Energy Solutions refinery facility
SSS	Site-Specific Standard
Stantec	Stantec Consulting Services, Inc.
SVOC	semi-volatile organic compound
TDS	total dissolved solids
TEG	tetraethylene glycol
Terraphase	Terraphase Engineering Inc.
TM	technical memorandum
TPI	TPI Environmental, LLC
UA	Used Aquifers
USEPA	United States Environmental Protection Agency
VISL	vapor intrusion screening level

VOC	volatile organic compound
VMS	vapor mitigation system
Work Plan	*Aboveground Storage Tank Closure Work Plan*

Certification

Pursuant to the requirements of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2), adopted May 19, 1995, which states:

Interpretation of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in this Commonwealth.

I hereby attest that, as a Professional Geologist licensed in the Commonwealth of Pennsylvania, I am familiar with, and have reviewed and/or prepared the interpretation of the geology and hydrogeology presented in the attached report entitled, *Release Investigation Report – Tank Group 06 and Tank Group 07, Former Philadelphia Energy Solutions Refinery, 3144 West Passyunk Avenue, Philadelphia, Pennsylvania*, dated November 2025.

Based on the available data represented in the report, I believe that the geologic and hydrogeologic interpretations made herein are reasonable and accurate.

November 14, 2025
Date

Christopher J. Voci, PG
Senior Principal Geologist
PA PG003892
Expires September 30, 2027

1 Introduction

Terraphase Engineering Inc. (Terraphase) has prepared this *Release Investigation Report* (the "Report"), on behalf of Bellwether District Holdings, LLC (BDH), formerly known as Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), to detail the results of Site Assessment and Site Characterization activities performed at Tank Group 06 and Tank Group 07 (the "Site") which is located within the Former Philadelphia Energy Solutions refinery facility (the "Facility"). The Facility, which is undergoing closure activities and redevelopment, is located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania (**Figure 1**). Remediation activities are being conducted at the Facility under the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) by both BDH and Evergreen Resources Group, LLC (Evergreen)[1] in accordance with the Consent Order and Agreement (CO&A) among Pennsylvania Department of Environmental Protection (PADEP), Sunoco, Inc. (R&M) n/k/a Energy Transfer (R&M), LLC, and BDH dated August 14, 2012 and the 2020 First Amendment to that Agreement (2020 Amendment). In accordance with the CO&A, Sunoco/Evergreen is responsible for addressing contamination at the Facility resulting from release(s) which occurred before September 8, 2012, i.e., "Pre-Existing Contamination," and PESRM, now known as BDH, is responsible for addressing contamination at the Facility resulting from release(s) which occurred after September 8, 2012, i.e., "Post-September 2012 Contamination."

The Site Assessment and Site Characterization activities described in this Report were performed in accordance with the applicable provisions of The Storage Tank and Spill Prevention Act (Act 32), Title 25 of the Pennsylvania Code (25 Pa. Code) Chapter 245 (Subchapter D), and Terraphase's (2021) *Aboveground Storage Tank Closure Work Plan* (Work Plan), which was approved by the PADEP on April 23, 2021. As discussed in the Work Plan, closure of the aboveground storage tanks (AST) under Act 32 is being pursued through a group closure process, in which ASTs in the same general area (e.g., tank farm) have been demolished, removed, investigated, and evaluated at about the same time. Demolition of the tanks has been proceeding in phases from the north to the south with nine Tank Groups in all. As of May 2023, all tanks subject to closure under Act 32 as part of the Work Plan were demolished.

The data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental analytical data for the Facility to determine whether contamination detected during Site Assessment and Site Characterization sampling is (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST. Pre-Existing Contamination will be addressed by Evergreen under its sitewide Act 2 case. Post-September 2012 Contamination, not associated with a release from an AST, will be addressed by BDH under Act 2. Post-September 2012 Contamination associated with a release from an AST will be addressed by BDH under Act 32.

[1] Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC ("Evergreen") is managing the legacy remedial work for Sunoco (R&M), LLC. For clarity, Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) f/k/a Sunoco (R&M), LLC n/k/a Energy Transfer (R&M), LLC effective 4/19/2021 and Evergreen shall be referred to collectively as "Evergreen" in this Report.

The Work Plan (Terraphase 2021) also detailed a tank category system, in which tanks are classified into one of the following three categories:

- **Category 1.** Tanks less than or equal to 21,000 gallons and have no evidence of a release to the environment.
- **Category 2.** Tanks greater than 21,000 gallons and have no evidence of a release to the environment.
- **Category 3.** Tanks that have evidence of a release to the environment identified during infrastructure removal or sampling.

Tanks were initially classified as Categories 1 or 2. Category 1 tanks were inspected visually during demolition for release(s) to the environment. Category 2 tanks were inspected visually, and a Site Assessment sampling program was initiated at each tank. If indications of a release were identified through visual observation or sampling, the tank was reassigned to Category 3. Category 3 tank areas were sampled to characterize the nature and extent of contaminants and assess the need for remedial or interim actions.

Tank Groups 06 and 07 (**Figure 2**) are located within a larger area of the Facility formerly referred to as Girard Point. Evergreen is currently engaged in characterization and remediation work at the Facility under the Pennsylvania One Cleanup Program under the oversight of the PADEP and the United States Environmental Protection Agency (USEPA; eFACTS PF No. 769099 [AOI 6], 750870 [AOI 7], and 780190 [Philadelphia Refinery Sitewide]). In its associated documentation, Evergreen has identified the area of the Facility where Tank Group 06 is located as Area of Interest (AOI) 7, and the area of the Facility where Tank Group 07 is located as AOI 6. The 42[2] ASTs addressed in this Report are shown on **Figure 3** and listed in **Table 1**.

Table 1 includes two tanks (i.e., GP R 250 and GP R 251) located within what is referred to as Tank Group 07A. These two tanks were addressed separately from Tank Group 07 due to standing shallow groundwater which prevented sampling in accordance with the Work Plan (Terraphase 2021). Following consultation with PADEP, alternative sampling was conducted. The *Tank Group 07A Closure Report*, prepared by Terraphase on behalf of BDH, was submitted to PADEP on February 20, 2024. PADEP reviewed and agreed on May 2, 2024 that the T*ank Group 07A Closure Report* demonstrated clean closure of these two tanks. PADEP requested that the T*ank Group 07A Closure Report* be included as an appendix to this Report to capture information for the Tank Group 07 tanks in total. At the request of PADEP, the *Tank Group 07A Closure Report* and email correspondence with PADEP are included in **Appendix A**. As such, the specific details and sampling associated with these two tanks will not be discussed herein.

Eleven tanks were initially categorized as Category 1 (i.e., GP R 2000, GP U 1158, GP U 894, GP R 3003, GP R 3101A, GP R 2500, GP R 2501, GP 75A, GP 76A, GP 77A, and GP 78A) within Tank Group 06 and three tanks were initially categorized as Category 1 (i.e., GP R 796, GP U 1221, and GP 79A) within Tank Group 07. Since these tanks showed no signs of release during demolition and remain classified as

[2] 25 ASTs are located in Tank Group 06, 15 ASTs are located in Tank Group 07, and 2 tanks are located in Tank Group 07A (see Appendix A for more details regarding Tank Group 07A).

Category 1, in accordance with the Work Plan (Terraphase 2021), the Site Assessment for these tanks is considered complete. The Site Assessment outcome category for these 14 tanks is "No Obvious Contamination – Sample Results Meet Action Levels." Based on the Site Assessment outcome category for the 14 Category 1 tanks, no additional Site Assessment or Site Characterization activities were needed for these tanks.

This Report presents the results of the Site Assessment and Site Characterization activities performed for the remaining 28[3] ASTs. It identifies those ASTs where potential releases to the environment were (and were not) identified based upon a comparison of the soil analytical results to the following Non-Residential (Non-Res) Statewide Health Standard (SHS) Medium-Specific Concentration (MSC) numeric values for soil:

- Non-Res MSCs for Direct Contact (DC) Exposure to Surface Soil (0-2 feet [ft])
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for Soil to Groundwater (SGW) (Used Aquifer, Total Dissolved Solids [TDS] ≤ 2,500)

Soil characterization results for five ASTs (i.e., GP R 272, GP R 286, GP R 973, GP R 1039, and GP R 1047) in Tank Group 06 and three ASTs (i.e., GP R 250, GP R 251, and GP R 1088) in Tank Group 07 did not identify concentrations of regulated substances greater than these applicable SHS MSCs. As such, these six ASTs have "No Obvious Contamination – Sampling Results Meet Standards/Levels" and are considered to have met the closure and requirements set for in Act 32.

The remaining 20 ASTs – specifically, 9 in Tank Group 06 (i.e., GP R 270, GP R 273, GP R 276, GP R 281, GP R 282, GP R 284, GP R 285, GP R 1038, and GP R 1101) and 11 in Tank Group 07 (i.e., GP R 494, GP U 767, GP R 790, GP R 791, GP R 792, GP R 793, GP R 794, GP R 798, GP R 799, GP R 1116, and GP R 1117) – exhibited soil concentrations of regulated substances greater than these applicable SHS MSCs. Therefore the conclusion for these tanks is "No Obvious Contamination – Sample Results Do Not Meet Action Levels." Notification was made to PADEP of potential releases to the environment and Incident No. 58434 and 57973 were assigned to Tank Group 06 and Tank Group 07, respectively, by PADEP.

For the 20 ASTs where potential releases to the environment were identified, Site Characterization was completed to determine 1) the sources of contamination (per 25 Pa. Code § 245.309(a)(4)), 2) whether the identified contamination is Pre-Existing Contamination, and 3) the extent of migration of regulated substances in soil and groundwater (per 25 Pa. Code § 245.309(b)(4)).

For these ASTs, the extent of soil and groundwater concentrations of regulated substances have been delineated to the following Non-Res SHS MSC numeric values:

<u>Soil</u>

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

[3] 14 ASTs in Tank Group 06, 12 ASTs in Tank Group 07, and 2 ASTs in Tank Group 07A.

Groundwater

- Non-Res MSCs for Groundwater (GW) Exposure for Used Aquifers (UA) (TDS ≤ 2,500)

The presence of light non-aqueous phase liquid (LNAPL) in the area has also been defined based upon measurements collected during recent gauging events for monitoring wells within, and in the vicinity of, Tank Group 06 and 07.

Based on the Site Assessment and Site Characterization data collected by BDH and data collected by Evergreen near Tank Group 06 and 07, the contamination identified in the area of Tank Group 06 and 07 represents Pre-Existing Contamination. No evidence of Post-September 2012 Contamination has been identified during the Site Assessment and Site Characterization sampling. As such, the contamination will be addressed under Act 2 by Evergreen under their existing Act 2 Sites (eFACTS PF No. 769099 [AOI 6], 750870 [AOI 7], and 780190 [Philadelphia Refinery Sitewide]). **Appendix B** provides a letter from Evergreen documenting their agreement.

As discussed in this Report, sufficient physical data has been collected to:

- Characterize the sources of contamination identified in the area and the extent of regulated substances in soil and groundwater associated with releases to the environment from ASTs;
- Allow for a selection of a Standard for attainment; and
- Determine the need for remedial action and select a remedial alternative.

Because the contamination identified in the area represents Pre-Existing Contamination, the contamination will be addressed by Evergreen under Act 2, and BDH will not be issuing a Remedial Action Plan (RAP) per 25 Pa. Code § 245.311.

Section 2 includes a description of the Site, operational/usage history of the ASTs, and information regarding site topography, geology, hydrogeology, and surface water. This section also includes a summary of known past releases to the environment in the area. **Appendix C** provides the Aboveground Storage Tank System Closure Report forms (2630-FM-BECB0514) for each of the ASTs.

Section 3 discusses the tank infrastructure and removal activities.

Section 4 discusses the results of the Site Assessment and Site Characterization. It documents how adequate characterization has been performed to determine the sources of contamination, the extent of migration of regulated substances in soil and groundwater and provides an ecological screening evaluation. Finally, this section explains the lines of evidence considered in evaluating whether contamination identified in the area is Pre-Existing Contamination or Post-September 2012 Contamination.

Section 5 provides why a specific Standard for attainment has not been identified.

Section 6 provides the conceptual site model which discusses the current and reasonably anticipated future land and groundwater use at and in the vicinity of the Site, provides the scenarios for potential human exposure (i.e., receptors, exposure media, exposure routes), describes the review for the potential presence of threatened and endangered species and/or special concern species, describes the

fate and transport of contaminants, and presents the institutional and engineering controls that may be utilized in the future to manage vapor intrusion exposure.

Section 7 provides a summary of this Report and the conclusions of the Site Assessment/Site Characterization for Tank Group 06 and 07.

Section 8 presents a listing of the documents referenced in this Report.

2 Background

The Facility, a former 1,300-acre refinery, is being redeveloped. The Site[4] is approximately 78 acres[5] in size and is located within an area formerly referred to as Girard Point. Parts of the Site area are also referred to as AOI 6 or AOI 7 by Evergreen as part of their One Cleanup Program effort. The Site is located north of the Platt Bridge, between Lanier Street and the Schuylkill River. Prior to demolition, Tank Group 06 consisted of seven separate areas containing tanks located in the northern portion of the former Girard Point Refinery. Tank Group 07 consisted of five separate areas containing tanks located in the central portion of the former Girard Point Refinery. The areas within both Tank Group 06 and 07 were separated by buildings, large piping structures, parking lots, and plant access roadways. Except for the asphalt roadways and parking areas that cut through portions of the Tank Groups, and the tank foundations themselves, the area was not covered by hardscape.

The 42 ASTs addressed in this Report are listed in **Table 1**. The 25[6] other ASTs (i.e., GP R 271, GP 274, GP 275, GP 1202, GP 1050, GP R 1051, GP 1052, GP 1064, GP 1065, GP 1066, GP 1067, GP 1068, GP 1069, GP C1 1100, GP 1118, GP 1123, GP U 676, GP U 677, GP U 768, GP C2 797, GP 493, GP 495, GP 496, GP 497, and GP 498) were previously closed; as such, are not subject to this closure effort. **Figure 3** provides a layout of the Tank Groups.

Two tanks (i.e., GP R 250 and GP R 251) were previously characterized separately from Tank Group 07 (i.e., Tank Group 07A). The *Tank Group 07A Closure Report*, prepared by Terraphase on behalf of BDH, was submitted to PADEP on February 20, 2024. PADEP reviewed and on May 2, 2024 agreed that the T*ank Group 07A Closure Report* demonstrated clean closure of these two tanks. PADEP requested the T*ank Group 07A Closure Report* be included in this Report as an appendix to capture information for the Tank Group 07 tanks in total. At the request of PADEP, the *Tank Group 07A Closure Report* and email correspondence with PADEP is included in **Appendix A**. As such, further details and sampling associated with these two tanks are not provided in this Report.

2.1 Operational History/Usage of the Tanks

The Facility operated as a petroleum refinery between 1860 and 2019. The refinery ceased operations in 2019. The demolition and decommissioning of the subject ASTs began in March 2022 and September 2021 for Tank Group 06 and Tank Group 07, respectively. Prior to demolition, the primary products held within the Tank Group 06 tanks were: No. 6 fuel oil (GP R 1039), alkyl slurry (GP R 1038), fresh caustic (GP R 1047 and GP R 973), heavy naphtha (GP R 286), light naphtha (GP R 276 and GP R 285), recovered oil (GP R 272, GP R 1101, and GP R 270), and vacuum gas oil (GP R 273, GP R 284, GP R 281, and GP R 282). The primary products held within Tank Group 07 tanks were: benzene (GP R 790, GP R 791, GP R 798, and GP R 799), fresh caustic (GP R 1088), cumene (GP R 792 and GP R 793), main frac bottoms (GP R 494), recovered oil (GP U 767), tetraethylene glycol (TEG) (GP R 794), and udex feed (GP R 1116 and

[4] Tank Group 06 and 7 consists of tank farms referred to by the Facility as the North Tank Field.

[5] Tank Group 06 and 07 are approximately 57 and 21 acres in size, respectively.

[6] 16 ASTs in Tank Group 06 and 9 ASTs in Tank Group 07.

GP R 1117). Additional details regarding the size, contents, and construction of the tanks are provided in **Table 1**.

2.2 Topography

Topography at the Site is generally flat. Regional topography slopes gently to the west towards the Schuylkill River, the nearest water body to the Site. The ground surface elevation in the area of Tank Group 06 and 07 is approximately 3.9 and 7 ft above mean sea level, respectively.[7]

2.3 Regional Geology and Hydrogeology

The Facility is located within the Atlantic Coastal Plain Physiographic Province of Pennsylvania, which is defined as having a flat topography, underlain by unconsolidated sediments that thicken to the southeast. The Coastal Plain deposits are sand, gravel, silt, and clay which drape over crystalline igneous and metamorphic rocks. In general, the resulting sediments are approximately 250 ft thick along the Delaware River. These sediments unconformably overlie older, very complexly deformed rocks of the Piedmont physiographic province. Anthropogenic fill overlies the quaternary-aged Coastal Plain deposits in the vicinity of the Facility. The fill material was placed in the reclamation of lowlands along the banks of the tidal Delaware and Schuylkill Rivers during industrialization.

Native sediments beneath the fill consist of gray, muddy deposits with occasional sand, gravel, and organic-rich lenses. These sediments were deposited in floodplain, channel, and marsh environments through the Holocene Epoch. The most recent deposits are poorly consolidated and below the water table, as a result of their relatively young geologic age and position along the Schuylkill River (tributaries and creeks). Below the Holocene deposits is Pleistocene glacial outwash, commonly referred to as the "Trenton Gravel" along the Delaware River valley. Cretaceous-age sand and clay units making up the Potomac-Raritan-Magothy aquifer system underly the Pleistocene deposits.

The sedimentary record near the Facility consists of a complex series of water-bearing sand units which can comprise one or more hydrostatic units. Previous investigations conducted at the Facility have identified two saturated zones – specifically, an unconfined shallow groundwater unit (occurring within the Holocene and Trenton Gravel deposits) and a deep groundwater unit known as the Farrington Sand, which is part of the Potomac-Raritan-Magothy aquifer system. The deeper groundwater unit is separated by a clay unit; as such, the deeper groundwater has been classified as a semi-confined aquifer.

Appendix D provides select figures from the *Remedial Investigation Report, Area of Interest 6* (AOI 6 RIR; GHD 2017c) and *Remedial Investigation Report, Area of Interest 7* (AOI 7 RIR; GHD 2017a) for reference. This includes Figure 8 from both RIRs, which provides a detailed cross section of the subsurface in the area from north to south in Tank Group 06 and 07, respectively.

[7] North American Vertical Datum of 1988.

2.4 Local Geology and Hydrogeology

The Site Assessment and Site Characterization soil investigations primarily targeted the top 5 ft, with certain Site Characterization investigation borings advanced to depths to 15 ft below ground surface (bgs) to vertically characterize the extent of constituents of concern (COC) in soil in both Tank Group 06 and 07. Monitoring wells were installed to depths of up to 15 ft bgs in Tank Group 06 and up to 13 ft bgs in Tank Group 07 during the Site Characterization. Anthropogenic fill was observed in soil cores collected from most of the soil borings installed in Tank Group 06 at thicknesses up to 5 ft. The native soil beneath the fill layer generally consists of brown, black, and gray sands and silt. During Site Assessment soil sampling, saturated soil was not encountered in Tank Group 06. Anthropogenic fill was observed in soil cores collected from most of the soil borings installed in Tank Group 07 at thicknesses up to 15 ft. The native soil beneath the fill layer generally consists of brown to gray sand, clay, and silt. During Site Assessment soil sampling, saturated soil was not encountered from 0-5 ft bgs. Due to seasonal change in groundwater elevations, saturated soils were encountered during Site Characterization sampling as shallow as 0.5 ft bgs in Tank Group 07. In accordance with 25 Pa. Code § 245.310(a)(14), boring and well construction logs for soil borings and monitoring wells installed by BDH during Site Assessment and Site Characterization in Tank Group 06 and 07 are provided in **Appendix E**.

Groundwater in the unconfined aquifer has generally been first encountered in Tank Group 06 at depths of approximately 0.2 to 18 ft bgs (GHD 2017a). Groundwater in the unconfined aquifer has generally been first encountered in Tank Group 07 at depths of approximately 0.5 to 6 ft bgs (GHD 2017c). During Site Characterization activities conducted by BDH in Tank Group 06 and 07, unconfined aquifer groundwater was encountered between approximately 1.5 and 7 ft bgs and 0.5 and 6.5 ft bgs, respectively.

Mounding in the unconfined aquifer has been noted to be present in Tank Group 06 (within AOI 7) adjacent to the bulkhead and in the southeast portion of the AOI as presented on Figure 14 of the AOI 7 RIR (GHD 2017a; included in **Appendix D**). The AOI 7 RIR attributes the mounding along bulkhead as a result of the lower hydraulic conductivity of the bulkhead compared to the soil in the area. The mounding in the southeast portion of the AOI may be due to lower permeability soil beneath the tanks.

Similarly, mounding in the unconfined aquifer has been noted to be present in Tank Group 07 (within AOI 6) adjacent to the bulkhead and in the southeast portion of the AOI as presented on Figure 14 of the AOI 6 RIR (GHD 2017c, included in **Appendix D**). The AOI 6 RIR also attributes the mounding along bulkhead as a result of the lower hydraulic conductivity of the bulkhead compared to the soil in the area.

Groundwater at the refinery has historically been interpreted to flow to the west and north (in the area of Tank Group 06) and to the southwest (in the area of Tank Group 07) toward the Schuylkill River. However, based on Figure 2-3-29 of the *Sitewide Fate and Transport Remedial Investigation Report* (2025 Fate and Transport RIR; Stantec 2025a; included in **Appendix D**), groundwater flow in the unconfined aquifer in both Tank Group 06 and 07 flows radially due to mounding as described above.

Based on gauging events performed by Evergreen between February and April 2023, groundwater flow in the unconfined aquifer in Tank Group 06 is consistent with historical and current gauging data and

interpretation (GHD 2017d, Stantec 2025a) and generally directed to the west and north, with some mounding in the southwestern portion of the area near Tank Group 07.

Based on gauging events performed by Terraphase on January 3 and February 8, 2023 in Tank Group 07 (see Section 4.2.2), consistent with Evergreen's gauging data and interpretation (GHD 2017d, Stantec 2025a), groundwater flow in the unconfined aquifer in Tank Group 07 is generally directed to the southwest. In accordance with 25 Pa. Code § 245.310(a)(16), **Figure 4** provides an illustration of the interpreted groundwater flow regime in the unconfined aquifer including data collected by Evergreen.

2.5 Surface Water

The nearest surface water body is the Schuylkill River which bounds the Site to the north and west, and at its closest point is approximately 25 ft from Tank Group 06 and 50 ft from Tank Group 07. As described in Section 2.4, the AOI 6 RIR (GHD 2017c) and the AOI 7 RIR (GHD 2017a), unconfined aquifer groundwater flow is generally to the west and north (in the area of Tank Group 06) and to the southwest (in the area of Tank Group 07) toward the confluence of the Delaware and Schuylkill Rivers. Stormwater detention/retention basins were identified adjacent to the east of Tank Group 06 and 07, but no wetlands were identified within the bounds of the Tank Groups. In accordance with 25 Pa. Code § 250.309 and § 250.406, as referenced by 25 Pa. Code § 245.310(a)(29), and as discussed in detail in Section 4.3.1.2, groundwater contamination has been delineated to Non-Res MSCs and the extent of LNAPL has been defined in the area of Tank Group 06 and 07. As such, groundwater contamination associated with potential release(s) from ASTs in Tank Group 06 and 07 does not impact the Schuylkill River.

2.6 Known Past Releases to the Environment

Pre-Existing Contamination is known to be present in this area of the Facility and must be considered when interpreting the Site Assessment and Site Characterization results for Tank Group 06 and 07. This section provides a discussion of past releases and potential other sources of contamination in the Tank Group areas.

Previous investigations performed by Evergreen in Tank Group 06 are discussed in:

- GHD's 2017 AOI 7 RIR;
- GHD's 2017 *Site Characterization Report/Remedial Action Completion Report for Aboveground Storage Tanks 270, 271, 272, 273, 275, 277, 281, 1002, 1100, and 1108; Incident No. 40386, 6134, 45686, 45699, 29142, 45694, 42279, 45697, 45689, 38132, 30777, 5913, 36456, 36578, 45700 and Underground Storage Tanks M-004 and M-005* (AOI 7 SCR/RACR); and
- Stantec's 2009 *Tank GP 270 Release – Site Characterization Letter Report* (GP 270 SCLR).

These reports identified known prior releases from three ASTs in Tank Group 06: (1) Tank GP R 270 (Incident No. 40386), (2) Tank GP R 273 (Incident No. 45697), and (3) Tank GP R 281 (Incident Nos. 5913 and 30777). A prior release associated with GP R 270 of approximately 2,720 gallons of recovered oil was reported to PADEP on June 28, 2009 (Incident No. 40386). A prior release associated with GP R 273

of approximately 78 gallons of vacuum gas oil was reported to PADEP on June 6, 1995. The two prior releases associated with GP R 281 were reported to PADEP in September 1999 (Incident No. 30777) and in November 2001 (Incident No. 5913). The September 1999 incident involved the release of approximately 84 gallons of vacuum gas oil, and the November 2001 incident involved the release of approximately 200 gallons of vacuum gas oil. In addition to soil contamination, these releases have resulted in groundwater contamination (including LNAPL) that is present or that has migrated to within the bounds of Tank Group 06. Contamination from these releases is Pre-Existing Contamination.

Prior investigations performed by Evergreen in the Tank Group 07 area are discussed in:

- Geosyntec Consultants, Inc.'s (Geosyntec) *2023 Pilot Test Report Former Philadelphia Refinery AOI 6 Girard Point*;
- Aquaterra Technologies Inc.'s (Aquaterra) 2024 *AOI 6 – Area West of 700 Series Tanks LNAPL Remediation Technical Memorandum*;
- Sanborn, Head & Associates, Inc.'s (Sanborn Head) 2025 *Volume 3 – Sitewide Human Health Risk Assessment of the Sitewide Fate and Transport Remedial Investigation Report, Human Health Risk Assessment & Cleanup Plan* (Sitewide HHRA); and
- Sanborn Head's 2025 *Volume 4 – Sitewide Human Health Risk Assessment Addendum and Cleanup Plan* (Sitewide CP).

Pre-Existing Contamination is known to be located near the 700 Series Tanks (tanks GP R 790 through GP R 794, GP R 796, GP R 798, and GP R 799). Evergreen conducted a remediation pilot study test in this area in October 2022 focused on reducing groundwater concentrations of dissolved petroleum compounds and LNAPL. Pre-Existing LNAPL was regularly observed and recovered by Evergreen in monitoring wells near the 700 Series Tanks (wells B-192 through B-195 and B-150; Aquaterra 2024b). **Figure 5** shows the estimated extent of Pre-Existing LNAPL near the 700 Series Tanks.

Appendix F provides tables of soil and groundwater analytical results from investigations conducted by Evergreen prior to Site Assessment and Site Characterization sampling by BDH.

In addition to these known and suspected discrete releases, the Facility was used for petroleum storage and refining for over a century, and both localized and diffuse contamination is present throughout the Facility associated with this past industrial use and with land filling activities (i.e., historic fill[8]). It is important to consider the presence of this contamination in interpreting the Site Assessment and Site Characterization results for Tank Group 06 and 07.

[8] "Historic fill", which is defined by PADEP in their (2021c) *Management of Fill Policy*, is material, excluding material disposed in landfills, waste piles and impoundments, used to bring an area to grade prior to 1988, and consisting of a conglomeration of soil and residuals, such as ashes from the residential burning of wood and coal, incinerator ash, coal ash, slag, dredged material and construction and demolition waste.

3 Tank Infrastructure and Removal

In accordance with the Work Plan (Terraphase 2021), Northstar Contracting Group, Inc. (NorthStar) and its subcontractors, JD2 Environmental, Inc. (JD2) and AST Construction, Inc., PADEP-certified Aboveground Field Constructed Storage Tank System Removal contractors, were retained by BDH to perform tank demolition and handling, including (1) hazard recognition and abatement; (2) removal and handling of vapors, product, wastewaters, and accumulated sludges; (3) overseeing or verifying cleaning of the storage tank system; (4) dismantling the ASTs; and (5) removal of ancillary equipment and piping.

The demolition of the 14 Tank Group 06 ASTs began in March 2022 and was completed in May 2023:

- GP R 1039 (PADEP No. 049A)
- GP R 1038 (PADEP No. 050A)
- GP R 1047 (PADEP No. 011A)
- GP R 973 (PADEP No. 066A)
- GP R 286 (PADEP No. 028A)
- GP R 276 (PADEP No. 023A)
- GP R 281 (PADEP No. 025A)
- GP R 285 (PADEP No. 027A)
- GP R 270 (PADEP No. 021A)
- GP R 272 (PADEP No. 022A)
- GP R 1101 (PADEP No. 047A)
- GP R 273 (PADEP No. 003A)
- GP R 284 (PADEP No. 004A)
- GP R 282 (PADEP No. 026A)

The demolition of the 12 Tank Group 07 ASTs began in September 2021 and was completed in July 2022:

- GP R 1117 (PADEP No. 005A)
- GP R 791 (PADEP No. 006A)
- GP R 798 (PADEP No. 007A)
- GP R 494 (PADEP No. 029A)
- GP R 1116 (PADEP No. 030A)
- GP R 1088 (PADEP No. 033A)
- GP R 250 (PADEP No. 019A)[9]
- GP R 790 (PADEP No. 034A)
- GP R 792 (PADEP No. 035A)
- GP R 793 (PADEP No. 036A)
- GP R 794 (PADEP No. 037A)
- GP R 799 (PADEP No. 039A)
- GP U 767 (PADEP No. 046A)
- GP R 251 (PADEP No. 020A)[12]

During the removal, it was determined that Tank Group 06 tanks GP R 286, GP R 276, GP R 285, GP R 270, GP R 272, GP R 284, GP R 281, and GP R 282 had thick concrete tank foundations, GP R 273 had a double bottom, and Tank Group 07 tanks GP R 792, GP R 794, and GP R 1116 had double bottoms Double bottoms are forms of secondary containment located under the tanks that allow for visual inspection and potential repair to any observed leaks. BDH retained ENTACT, LLC (ENTACT) to remove the double bottoms.[10] Removal of double bottoms was completed by ENTACT in Tank Group 06 in August 2022 and in Tank Group 07 in July 2022.

[9] Associated with Tank Group 07A.

[10] Due to some double bottoms not being removed until after the completion of Site Assessment and Site Characterization sampling in Tank Group 06, some proposed Site Assessment samples located within the former tank boundary could not be sampled. The Site Characterization scope sampled additional locations around the former tank boundary to ensure full characterization of the tank to account for this.

During the performance of Site Assessment sampling, the concrete foundations associated with certain ASTs were partially removed to allow access for sampling. During this effort, free product and water were encountered beneath the concrete pad at GP R 281 in Tank Group 06. Further details regarding interim remedial response are described in Section 4.1. Based upon these observations, PADEP was notified on January 12, 2023 of a potential release from this AST to the environment. As discussed further in Section 4.3, three additional notifications of release were reported for Tank Group 06 and two notifications of release were reported for Tank Group 07.

On behalf of BDH, JD2 submitted to PADEP the required tank registration amendments, copies of which are provided as **Appendix G**.

In accordance with 25 Pa. Code § 245.309(a) and (b)(3), as referenced by 25 Pa. Code § 245.310(a), the Aboveground Storage Tank System Closure Report forms (2630-FM-BECB0514) were previously submitted on June 30, 2023 and February 6, 2023 for Tank Group 06 and 07, respectively, and are included as **Appendix C**.

Pursuant to 25 Pa. Code Section 245.310(a)(11), field personnel involved with AST closure activities described in this Report have completed work in accordance with site-specific plans which were implemented in accordance with Occupational Safety and Health Administration requirements in 29 Code of Federal Regulations 1910.120. Each consultant, contractor, subcontractor, and third-party company performing fieldwork associated with the AST closure activities was required to prepare its own site-specific health and safety plan.

4 Site Assessment and Site Characterization

This section discusses the results of the Site Assessment and Site Characterization activities performed following the identification of potential releases to the environment from the Tank Group 06 and 07 ASTs.

Section 4.1 describes the Site Assessment sampling and analysis methods that were performed by BDH. Section 4.2 discusses the subsequent Site Characterization sampling. Section 4.3 discusses the soil analytical results and documents the approach to allocate soil and groundwater contamination (including LNAPL, if applicable) to (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST.

4.1 Site Assessment

The Site Assessment soil sampling was performed by Ransom Consulting, LLC (Ransom) and their subcontractor TPI Environmental, LLC (TPI). In total, the effort involved the installation of 111 soil borings and the collection of 116 soil samples (which include five duplicate samples) in Tank Group 06. The effort involved the installation of 95 soil borings and the collection of 100 soil samples (which include five duplicate samples) in Tank Group 07. Prior to the initiation of the sampling activities, the Pennsylvania One Call System (811 Dig Safe) was contacted to identify underground utilities at the Site. In addition, a review of available information provided by facility representatives regarding the presence/absence of underground utilities was used in the selection of sampling locations. Finally, a private utility locater was retained to use geophysical and electromagnetic techniques to identify potential utilities or subsurface structures at proposed drilling locations.

As discussed in the Work Plan (Terraphase 2021), when no evidence of a release to the environment was identified during tank removal, ASTs were subject to Site Assessment sampling using a grid-based approach with additional samples biased toward the locations of pipe connections or other key infrastructure. The Site Assessment sampling was conducted between December 6, 2022 and December 5, 2023 in Tank Group 06 and between July 18, 2022 and August 15, 2022 in Tank Group 07.

In accordance with the approved Work Plan, soil borings were completed using direct-push (i.e., Geoprobe) drilling or hand auger methods and advanced through the top 5 ft of soil. Continuous soil cores were collected, and field screened using a photoionization detector (PID) to identify potentially impacted zones. Soil sampling intervals were selected based on the results of field screening (i.e., staining, odors, and elevated PID readings). Where potentially impacted materials were not encountered, discrete samples were collected at a depth of 3.0-3.5 ft bgs consistent with the Confirmatory Sampling Protocol detailed in PADEP's (2021b) *Closure Requirements for Aboveground Storage Tank Systems* which requires sampling "*at least one foot below underground product piping, two feet below product dispensers, remote fills or containment structures and aboveground product lines for AST, and three feet below the tank*." Where fill was observed, samples of the fill were collected if it consisted of soil or soil-like material. Groundwater was not encountered during the installation of these soil borings.

During the Site Assessment, the concrete foundations associated with certain ASTs were partially removed to allow access for sampling. During this effort, free product and water were encountered beneath the concrete pad at GP R 281, which previously contained vacuum gas oil, in Tank Group 06. This tank was re-classified as Category 3. The free product was contained within the ring wall of the tank foundation. BDH collected a sample of the free product and the analytical results are provided in **Appendix H**. Following this initial discovery of the free product, the facility demolition contractor initiated interim measures to recover the observed free product and ponded water from beneath the tank foundation. ACV Enviro, on behalf of Aquaterra, recovered approximately 4,000 gallons of LNAPL impacted water, which was stored in a dedicated frac tank at the Facility and later disposed of off-Facility (Aquaterra 2024a). Based on forensic analysis of the product, the estimated time of release was between 1995 and 2005. Therefore, the release is considered Pre-Existing Contamination and will be addressed by Evergreen under its sitewide Act 2 case (eFACTS PF No. 780190 [Philadelphia Refinery Sitewide]). Since none of BDH's Site Assessment or Site Characterization soil samples exhibited concentrations in soil above the MSCs in the vicinity of this tank, the release has been adequately characterized relative to the applicable MSCs. Additionally, in December 2023, Aquaterra collected one soil sample from 1.0-1.5 ft bgs from the center of the tank foundation. The sample was analyzed for Evergreen's short list of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and lead. The sample did not exhibit concentrations in soil above the applicable MSCs (Aquaterra 2024a).

Per 25 Pa. Code § 245.310(a)(14), **Figure 6** shows the location of the Site Assessment soil borings which were installed as part of this effort. **Appendix E** provides copies of the boring logs.

The analysis selected for each soil sample was based on the AST contents as prescribed by PADEP's Short List of Petroleum Products inventory (Table III-5 of the *Land Recycling Program Technical Guidance Manual* [PADEP 2021a]). As shown in **Table 1**, for the 28[11] ASTs subject to this closure effort, analytes included one or a combination of the following short lists, based on historical tank contents:

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 124TMB, 1,3,5-trimethylbenzene (135TMB), 1,2-dichloroethane (12DCA), 1,2-dibromoethane (12DBA), and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, MTBE, naphthalene, 124TMB, and 135TMB.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, MTBE, naphthalene, 124TMB, and 135TMB.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, MTBE, naphthalene, 1,2,4-TMB, and 135TMB.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene (BaA), chrysene, benzo(b)fluoranthene (BbF), benzo(a)pyrene (BaP), and benzo(g,h,i)perylene (BghiP).

[11] 14 ASTs in Tank Group 06, 12 ASTs in Tank Group 07, and 2 ASTs in Tank Group 07A.

- **Short List 6**. *Waste Oil:* benzene, toluene, ethyl benzene, cumene, naphthalene, pyrene, BaA, chrysene, BbF, BaP, indeno(1,2,3-c)pyrene (indeno), BghiP, and lead.

VOCs were analyzed via USEPA Method 8260D. Samples for SVOCs were analyzed via Method 8270E. Samples for lead were analyzed via USEPA Method 6010D. Additionally, TEG was analyzed for one tank via USEPA Method 8015D and pH was analyzed for one tank that stored fresh caustic via USEPA Method 9045D. Laboratory analytical services were provided by Alpha Analytical, Inc. (now Pace Analytical) of Westborough, Massachusetts and SGS North America, Inc. of Savannah, Georgia, both of which are PADEP-certified laboratories. Soil samples submitted for analyses were placed directly into laboratory-provided glassware and stored on ice in a cooler under appropriate chain of custody protocol.

Copies of the laboratory reports are included as **Appendix I**.

4.2 Site Characterization

When Site Assessment sampling indicated a potential release in Tank Group 06 and 07 (Section 4.1), a Site Characterization plan was developed. In total, the Site Characterization plan included the installation of 43 additional soil borings and the collection of 81 additional soil samples in Tank Group 06. The Site Characterization plan included the installation of 15 additional soil borings and the collection of 27 additional soil samples in Tank Group 07. It also included the installation of five groundwater monitoring wells in Tank Group 06 and the installation of eight groundwater monitoring wells in Tank Group 07, each sampled over two sampling events.[12] **Figure 7a** shows the locations of the additional soil borings installed during Site Characterization. **Figure 7b** shows the locations of the groundwater monitoring wells installed and sampled during Site Characterization. This section discusses how the Site Characterization plan was developed, the methods used during the sampling, and the evaluation of the results following characterization.

4.2.1 Site Characterization Soil Sampling

In accordance with 25 Pa. Code § 245.309(b)(4), the Site Characterization scope for soil in Tank Group 06, conducted between November 30, 2023 and July 18, 2024, included the installation of 43 soil borings and the collection of 81 soil samples. The Site Characterization scope for soil in Tank Group 07, conducted between July 18, 2022 and January 3, 2023, included the installation of 15 soil borings and the collection of 27 soil samples. The samples were collected at shallower (i.e., 0-0.5 ft bgs) and deeper (i.e., various 6-inch intervals from 3 to 9.5 ft bgs) soil depths than samples collected during the Site Assessment as necessary to vertically characterize the extent of COC concentrations in soil, as required by 25 Pa. Code § 245.309(c)(9). The sample collection protocols, and the sampling analyses used during the Site Characterization were consistent with those used during the Site Assessment. Samples were

[12] Due to the presence of LNAPL, monitoring well TG07-MW-06 was only sampled during the first groundwater sampling event for LNAPL. Additionally, an LNAPL sample was collected from TG07-MW-07 during the first groundwater event but was unusable due to low volume. BDH returned to the well a few days later to purge the minimal LNAPL and collected a groundwater sample at TG07-MW-07. During the second groundwater event, there was sufficient LNAPL present and a LNAPL sample was collected at TG07-MW-07.

either collected by Terraphase or Ransom. Additionally, sampling was completed by Terraphase in conjunction with monitoring well installation activities as discussed in Section 4.2.2.

Releases to soil from the ASTs and associated soil contamination would have been confined to the secondary containment berms. As a result, the horizontal extent of soil contamination associated with the ASTs would be limited to an extent no greater than the berms (except for where piping traverses through the berms). Where space existed between locations of identified soil contamination and the berms, horizontal step out sampling was considered to characterize soil contamination horizontally to within the containment areas.

The Site Characterization sampling methodology included visual inspection and field screening of soil during the installation of the soil borings. This allowed the field team to identify the interval with the greatest potential for contamination. If samples were collected at a depth greater than 0-0.5 ft bgs, it was either because PID readings were greater than those observed from 0-0.5 ft bgs, or PID readings indicated no evidence of VOCs, and samples were then collected from 3.0-3.5 ft bgs per PADEP (2021b). For these situations, shallow soil delineation sampling was unnecessary to determine the extent of concentrations greater than MSCs. Instead, the Site Characterization assumes that the concentrations observed in these subsurface samples also exist at the surface (i.e., 0-0.5 ft bgs).

Where vertical characterization was needed, Site Characterization samples were collected from the depth corresponding to the highest indication of contamination between the Site Assessment sample depth and the water table based upon field screening. Where horizontal delineation was needed, Site Characterization samples were collected from three depths: a surface depth (i.e., between 0-2 ft bgs), a depth corresponding to the highest indication of contamination between the 2 ft bgs and the water table based upon field screening, and immediately above the water table. Also, in order to determine the extent of COC concentrations in soil which are greater than MSCs, prior soil analytical results from Evergreen's remedial investigation (RI) activities were also used, as needed.

Soil boring logs are provided in **Appendix E**, in accordance with 25 Pa. Code § 245.309(c)(9) and 245.310(a)(14)**.**

4.2.2 Site Characterization Groundwater Sampling

In addition to soil characterization and in accordance with 25 Pa. Code § 245.309(b)(4), groundwater monitoring wells were installed in the vicinity of Tank Group 06 tanks GP R 270, GP R 276, GP R 284, GP R 285, and GP R 1038 and in the vicinity of Tank Group 07 tanks GP U 768, GP R 494, GP R 790, GP R 791, GP R 794, GP R 798, GP R 1116, and G PR 1117, as depicted on **Figure 7b**. The wells were installed to further characterize the extent of contamination identified in the vicinity of the tanks, as required by 25 Pa. Code §245.309(c)(10). Specifically, monitoring wells were installed in the vicinity of these tanks to target soil-to-groundwater exceedances in addition to the objectives described below.

The locations of the monitoring wells were selected with three objectives in mind: (1) to evaluate groundwater in the vicinity of each tank with suspected release to the environment, (2) to bias monitoring well locations toward areas where higher concentrations have been detected in soil, and (3) to obtain spatial coverage to better understand the nature and extent of COC concentrations in groundwater across the Tank Group 06 and 07. The data from these wells supplement the extensive

groundwater analytical data used by Evergreen to assess the fate and transport of Facility-related groundwater contamination in their 2025 Fate and Transport RIR (Stantec 2025a). The 2025 Fate and Transport RIR (Stantec 2025a) was approved by PADEP in April 2025 (PADEP 2025). PADEP considered Stantec's 2025 Fate and Transport RIR, and the data it relied upon, to be sufficient to assess potential future risks to human and ecological receptors and inform management decisions regarding sitewide cleanup goals.

In Tank Group 06, Ransom and MB Drilling, LLC installed the pre-pack wells through direct push technology to depths between 11 and 15 ft bgs. The monitoring wells were screened across the water table and constructed with 10 ft of 2-inch diameter Schedule 40 PVC well screens with 0.010-inch slotted pre-packed screen. A #1 sand filter pack was installed to fill the remaining annular space around the pre-packed screen to between 0.5 and 2 ft above the screened interval. A #00 fine sand seal was placed above the filter pack and the remaining annular space was filled with grout.

In Tank Group 07, Terraphase and TPI installed the pre-pack wells through direct push technology to depths between 12 and 13 ft bgs. The monitoring wells were constructed with 10 ft of 2-inch diameter Schedule 40 PVC well screens with 0.010-inch slotted pre-packed screen. A #1 sand filter pack was installed to fill the remaining annular space around the pre-packed screen to 2 ft above the screened interval. A #00 fine sand seal was placed above the filter pack and the remaining annular space was filled with hydrated bentonite chips. Monitoring well construction logs are provided in **Appendix E**.

The monitoring wells were installed and developed between November 29, 2023 and February 12, 2024 in Tank Group 06 and between December 21, 2022 and December 22, 2022 in Tank Group 07. The wells were developed with a submersible pump by over pumping to remove multiple well volumes. Well development continued until the water was visibly clear and free of sediment. Water produced by development of the Tank Group 06 wells was run through a portable granular activated carbon unit and discharged on the ground. Water produced by development of the Tank Group 07 wells was containerized and transferred for processing at the on-Site wastewater treatment plant.

Prior to groundwater sample collection, Ransom collected groundwater level measurements from newly-installed monitoring wells in Tank Group 06 (i.e., TG06-MW01 through TG06-MW05). Gauging was performed using an electronic oil/water interface probe. Approximate results of the gauging in Tank Group 06 are provided in **Tables 2a** through **2c**.[13] LNAPL was not encountered in these wells.

Similarly, prior to groundwater sample collection, Terraphase collected groundwater level and LNAPL thickness measurements from newly-installed monitoring wells in Tank Group 07 (i.e., TG07-MW01 through TG07-MW08). In addition, Terraphase utilized access to certain pre-existing monitoring wells located in the Tank Group for gauging purposes (i.e., B-45, B-148, and B-150, which are located to the north of GP R 494, south of GP R 796, and east of GP R 794, respectively). Gauging was performed using an electronic oil/water interface probe. The results of the gauging in Tank Group 07 are provided in **Tables 2d** and **2e.** To characterize unconfined groundwater conditions in proximity to Tank Group 06

[13] Since the five wells installed in Tank Group 06 were not surveyed, approximate groundwater elevations were calculated using the approximate ground surface elevation at each well based on the May 9, 2024 grading plan of the Facility provided by Pennoni.

and 07's ASTs, groundwater samples were collected from TG06-MW01 through TG06-MW05, TG07-MW01 through TG07-MW05, TG07-MW07, and TG07-MW08.[14] Measurable LNAPL was encountered in two wells BDH installed in Tank Group 07 (i.e., TG07-MW06 [i.e., max. 1.26 ft] and TG07-MW07 [i.e., max. 0.21ft]) and two Evergreen wells in Tank Group 07 (i.e., B-148 [i.e., max. 0.01 ft] and B-150 [i.e., max. 2.65 ft]) during both gauging events on January 3 and February 8, 2023.

The permanent monitoring wells installed by BDH were purged and sampled following established low flow protocols outlined in the PADEP Groundwater Monitoring Guidance (Appendix A of the *Land Recycling Program Technical Guidance Manual* [PADEP 2021a]).

- In Tank Group 06, an initial round of sampling for wells TG06-MW02, TG06-MW03, and TG06-MW05 was conducted on April 11, 2024. A second sampling event was conducted for these wells approximately 30 days later on May 14, 2024. For wells TG06-MW01 and TG06-MW04, the initial round of sampling was conducted on May 14, 2024. A second sampling event was conducted for these two wells approximately 30 days later on June 13, 2024.
- In Tank Group 07, an initial round of sampling was completed for all the wells (i.e., TG07-MW01 through TG07-MW08) on January 4 through 6, 2023. A second sampling event was conducted approximately 30 days later on February 8 through 9, 2023. Due to the presence of LNAPL, groundwater samples were not collected from well TG07-MW06 during either of the sampling events and a groundwater sample was not collected from well TG07-MW07 during the second sampling event.

The wells were purged using either a peristaltic pump or submersible pump in Tank Group 06 and 07, respectively. Purging continued until groundwater indicator parameters (i.e., water temperature, pH, conductivity, turbidity, and oxygen reduction potential) stabilized, as measured using a properly calibrated Horiba U-52 water quality meter equipped with a flow-through cell (see **Appendix E**). Tank Group 06 groundwater samples were analyzed for benzene, 135TMB, BaP, naphthalene, and/or lead based on the specific list of constituents in soil in the area of the monitoring well that exhibited concentrations greater than the SGW MSCs.[15] The Tank Group 07 groundwater samples were analyzed for PADEP Short List 1-6 parameters.

In Tank Group 07, LNAPL characterization samples were collected from wells where measurable LNAPL was encountered (i.e., TG07-MW06 and TG07-MW07) using a dedicated disposable Teflon bailer. The LNAPL characterization samples were analyzed for PIANO VOC (8260D, VOC by GC/MS), polycyclic aromatic hydrocarbons (PAH)/biomarkers (8270E-SIM), organic lead (8270E-SIM), density (SM2520C), and saturated hydrocarbons (8015D by GC-FID). A copy of the laboratory report is included in **Appendix I** and discussed further in Section 4.3.2.

[14] Groundwater samples were not collected from monitoring well TG07-MW-06 and only one round of groundwater sampling was completed at monitoring well TG07-MW-07 due to the presence of LNAPL. Instead, LNAPL characterization samples were collected and analyzed as discussed.

[15] As presented in Table 3, additional constituents (i.e., ethyl benzene and 124TMB) were also identified in soil above the applicable MSCs. These were not analyzed in the groundwater samples as they were identified following the groundwater sample scoping during the Site Characterization soil sampling.

Following sample collection, the bottles were packaged in coolers with bagged ice. A custody record for each sample was documented using a chain of custody form, which accompanied the sample containers during sample collection at the Site, transport to the lab, and analysis.

For these wells where groundwater samples were not collected due to the presence of LNAPL, it is assumed that concentrations in groundwater exceed the MSCs.

4.3 Analytical Results

Soil analytical results were compared to the following Non-Res SHS MSC numeric values to identify potential releases to the environment and determine if releases of regulated substances from the ASTs, and their associated piping, could have resulted in this contamination (per 25 Pa. Code § 245.309(a)(4)):

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)[16]
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

Where the soil data suggest potential releases of regulated substances from the ASTs, soil and groundwater concentrations were compared to the following Non-Res SHS MSC numeric values to determine the extent of migration of regulated substances in soil and groundwater (per 25 PA Code § 245.309(b)(4)):

<u>Soil</u>

- Non-Res MSCs for DC Exposure to Surface Soil (0-2 ft)
- Non-Res MSCs for DC Exposure to Subsurface Soil (2-15 ft)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500)

<u>Groundwater</u>

- Non-Res MSCs for GW Exposure for UA (TDS ≤ 2,500)

As discussed further in Section 6.1, soil and groundwater analytical results were not compared to PADEP's Vapor Intrusion Screening Levels (VISL) as part of this evaluation since there is currently no vapor intrusion exposure in the area (i.e., vapor intrusion pathway is incomplete). Future buildings at the Facility will be subject to vapor intrusion investigation and evaluation to determine if conditions could pose a potential unacceptable risk to future occupants. Similarly, as discussed further in Section 6.1, the comparison to Non-Res numeric values is appropriate since the future land use in the area of Tank Group 06 and 07 is commercial/industrial.

[16] As described in Section 4.2.1, soil sampling intervals were based on the results of field screening (i.e., staining, odors, and elevated PID readings). Where potentially impacted materials were not encountered, discrete samples were collected from native soil at a depth of 3.0-3.5 ft bgs, in accordance with PADEP's (2021b) *Closure Requirements for Aboveground Storage Tank Systems*. Since only subsurface (>2 ft bgs) soil samples were collected from some locations during the Site Assessment, the comparison of the resulting concentrations to MSCs conservatively disregard the surface/subsurface soil designation reflected in the Non-Res Soil DC MSCs (i.e., results were compared to the Non-Res DC MSCs for surface soil).

Based on Site Assessment analytical results from Tank Group 06 ASTs, PADEP was notified via telephone on January 4, 2023, pursuant with 25 Pa. Code § 245.304(c)(1) and 25 Pa. Code § 245.305, that concentrations greater than the applicable MSCs were identified at ASTs GP R 270, GP R 276, GP R 282, GP R 284, and GP R 285. PADEP assigned incident No. 58434 to this initial notification for tanks in Tank Group 06. Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 were combined with Incident No. 58434. Three additional notifications of release were reported to PADEP on July 12, 2023 (GP R 281), July 18, 2023 (GP R 273 and GP R 1038), and January 25, 2024 (GP R 1101). Copies of notification documents are included in **Appendix J**.

Based on Site Assessment analytical results from Tank Group 07 ASTs, PADEP was notified via telephone on August 10, 2022, pursuant with 25 Pa. Code § 245.304(c)(1) and 25 Pa. Code § 245.305, that concentrations greater than the applicable MSCs were identified at ASTs GP R 798, GP R 799, GP R 1088, GP R 1116, and GP R 1117. PADEP assigned incident No. 57973 to this initial notification for tanks in Tank Group 07. Similarly, this and any subsequent notifications required in Tank Group 07 were combined with the Incident No. 57973. One additional notification of release was reported to PADEP on August 25, 2022 (GP R 494, GP R 790, GP R 791, GP R 792, GP R 793, GP R 794, and GP U 767). Copies of notification documents are included in **Appendix J**.

The following sections provide a more detailed discussion of the results of sampling conducted in proximity to each of the 20 ASTs where the Site Assessment soil analytical results indicated potential releases to the environment.

4.3.1 Defining the Extent of Contamination

Based on the Site Assessment analytical results, Site Characterization analytical results, and Evergreen's pre-existing data set, the extent of concentrations exceeding MSCs in soil and groundwater in the areas of Tank Group 06 and 07 have been defined. Groundwater impacts are shown to extend laterally beyond the Tank Group boundaries. The Site Assessment and Site Characterization soil and groundwater results are tabulated and summarized in **Appendix H**.

4.3.1.1 Soil

As shown in **Table 3**, the following constituents were detected in soil samples from Tank Group 06 and 07 at concentrations greater than applicable MSCs:

- Non-Res MSCs for DC Exposure to Surface Soil: naphthalene (Tank Group 06) and benzene (Tank Group 07)
- Non-Res MSCs for DC Exposure to Subsurface Soil: none (Tank Group 06); benzene and cumene (Tank Group 07)
- Non-Res MSCs for SGW for Used Aquifers (TDS ≤ 2,500) MSC: benzene, ethyl benzene, 124TMB, 135TMB, BaP, naphthalene, and lead (Tank Group 06); benzene, cumene, ethyl benzene, toluene, 124TMB, 135TMB, BaP, naphthalene, and lead (Tank Group 07)

Figures 8a and **8b** present the horizontal extent of COCs in surface and subsurface soil, respectively, at concentrations greater than applicable Non-Res SHS MSCs.

4.3.1.2 Groundwater

As shown in **Table 4**, in accordance with 25 Pa. Code § 245.309(c)(10)(iv), benzene and lead were detected in groundwater samples collected from monitoring wells located in Tank Group 06 at concentrations greater than the Non-Res MSCs for Groundwater Exposure (Used Aquifer). Benzene, cumene, 12DCA, toluene, naphthalene, and lead were detected in groundwater samples collected from monitoring wells located in Tank Group 07 at concentrations greater than the Non-Res MSCs for Groundwater Exposure (Used Aquifer). **Figures 9a** and **9b** present the horizontal extent of COCs in groundwater in the area of Tank Group 06 and 07[17] and more broadly across the Facility, respectively, at concentrations greater than the applicable Non-Res SHS MSCs.

4.3.1.3 LNAPL

As depicted on **Figure 5,** the horizontal extent of LNAPL has been delineated in the vicinity of Tank Group 06 and 07 based on data collected during the Site Characterization gauging events, or the most recent Evergreen gauging data collected from previously existing wells.[18] As shown on **Figure 5**, 18 distinct LNAPL plumes have been identified in, or in proximity to Tank Group 06 and 07. The current aerial extent of each LNAPL plume has been defined.

4.3.2 Allocating Contamination

Several lines of evidence have been used to determine if the contamination identified within Tank Group 06 and 07, as noted in Sections 4.3.1.1 (Soil), 4.3.1.2 (Groundwater), and 4.3.1.3 (LNAPL), is indicative of (1) Pre-Existing Contamination, (2) Post-September 2012 contamination that is likely from ASTs releases, or (3) Post-September 2012 Contamination related to release(s) from sources other than ASTs. This evaluation included consideration for (1) whether the constituents exceeding MSCs are consistent with the product(s) stored in the tank, (2) whether the spatial distribution suggests the source of the contamination is near an ASTs, (3) whether the magnitude of the exceedances is consistent with levels observed from other sources in Evergreen's AOIs, (4) whether the spatial distribution is consistent with other sources in the area or if there are outliers, (5) whether the data are consistent with previously characterized contamination known to have existed in the area due to releases prior to September 8, 2012, (6) where there are indicator chemicals present in soil, groundwater, or LNAPL (e.g., gasoline additives) which were not used or stored after September 8, 2012, and/or (7) whether LNAPL analytical results and forensic evaluations suggest that contamination resulted from release(s) prior to September 8, 2012.

In order to explore these lines of evidence, all the soil, groundwater, and LNAPL sampling and analytical data available within the Tank Group 06 and 07 areas were considered. This includes data generated by Evergreen during their previous investigations (i.e., RIR), by BDH during sampling performed for AST

[17] The maximum concentration from the two most recent groundwater sampling events at each location with sample dates ranging from September 8, 2012 to May 31, 2024 were considered when defining the extent of groundwater contamination.

[18] The current estimated extent of LNAPL is based upon the most recent gauging event at each location, which ranged from October 8, 2019 to October 28, 2024.

Closure purposes, as well as for the investigation of release(s) in the area unrelated to ASTs. For illustration of these data sets, the following supplemental figures were developed:

- **Figures 10a** through **10i** and **11a** through **11e** present the available soil analytical results from samples collected in proximity to each AST and compare these concentrations to applicable SHS MSCs in Tank Group 06 and 07, respectively. Databoxes summaries are provided for each soil boring to allow for a detailed review of the soil characterization results in and around each AST. These figures support the identification of COC concentrations indicative of Pre-Existing Contamination (e.g., MTBE, 12DBA, 12DCA, lead) and whether they are spatially correlated with other COCs which would not be exclusive to older release(s) to the environment.
- **Figures 12a** through **12i** present a generalized illustration of the spatial distribution of the 10 constituents greater than the applicable MSCs in soil samples collected from the Tank Group 06 and 07 area by BDH and Evergreen: benzene, cumene, ethyl benzene, 124TMB, 135TMB, toluene, BaP, naphthalene, and lead.
- **Figure 13** presents the groundwater analytical results for those wells specifically installed and/or sampled by BDH during Site Characterization. Databox summaries are provided for each well and allow for a review of the groundwater characterization results from each sampling event. The concentrations are compared to applicable MSCs. Finally, the figure also illustrates the current estimated extent of LNAPL.

12DBA and 12DCA were historically used as a scavenger for lead in anti-knock gasoline mixtures[19] and up until the ban of leaded gasoline in the 1990s could have been present in gasoline-related releases to the environment. Similarly, MTBE was phased out of use in 2006. Lead in soil, groundwater, and some LNAPL components at the Site is related to either historic fill or releases of gasoline containing tetraethyl lead. Tetraethyl lead was phased out of use in 1996 and historic fill would have been placed prior to September 2012. Accordingly, the presence of 12DBA, 12DCA, MTBE, and lead in soil and groundwater (including some LNAPL components) is representative of Pre-Existing Contamination.

4.3.2.1 GP R 270

GP R 270 was formerly used to hold recovered oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10a**. As shown, some of the soil analytical results in the GP R 270 area were collected by Evergreen. The Site Assessment and Site Characterization data provides a more detailed understanding of the distribution of constituent concentrations in soil.

At GP R 270, two constituents (i.e., benzene and lead) were detected at concentrations in soil above the applicable MSCs in four out of 13 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, recovered oil is a secondary material consisting primarily of oil products recovered from refining production (i.e., oil separator skimmings, slop oil and emulsions, oil skimmed from ballast water tanks, and oil from refinery process units). These secondary materials are often byproducts of the oil-water separating process or found in tank bottoms, where lead

[19] https://www.atsdr.cdc.gov/toxprofiles/tp37.pdf; https://www.atsdr.cdc.gov/toxprofiles/tp38.pdff

is neither found, used, or added. Therefore, the presence of lead in soil is not the result of a release from GP R 270.

As shown on **Figure 10a**, benzene was detected in soil at concentrations greater than the applicable MSCs at GPR270-14 and GPR270-19. As discussed in Section 2.6, a Pre-September 2012 release is known to have occurred at this tank, and this area is impacted with Pre-Existing Contamination. As shown on **Figure 12a**, the concentrations of benzene detected during Site Assessment and Site Characterization sampling near GP R 270 are generally consistent with the range of benzene concentrations characterized across AOI 6 and AOI 7 by Evergreen. Given the presence of a pre-September 2012 release near this tank, the range of benzene concentrations in soil, and the presence of benzene in soil throughout the Facility, the presence of benzene in soil is Pre-Existing Contamination.

As shown on **Figure 13**, one constituent (i.e., lead) was detected at concentrations above the applicable MSCs in groundwater at TG06-MW01. As discussed, in Section 4.3.2, the presence of lead in groundwater is Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.2 GP R 273

GP R 273 was formerly used to hold vacuum gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10b**. As shown, there were limited soil analytical results in the GP R 273 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 273, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in one out of 12 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, vacuum gas oil is an intermediate produced during the vacuum distillation of crude oil. Vacuum gas oil is used as a feedstock for refining processes (i.e., Fluid Catalytic Cracking [FCC], hydrocracking, coking, etc.). Vacuum gas oil is mainly composed of hydrocarbons and would not contain lead or lead-containing additives. The presence of lead in soil is not the result of a release from GP R 273.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.3 GP R 276

GP R 276 was formerly used to hold light naphtha. Analytical results for soil samples collected near this AST are depicted on **Figure 10c**. As shown, there were limited soil analytical results in the GP R 276 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 276, four constituents (i.e., benzene, 135TMB, BaP and lead) were detected at concentrations in soil above the applicable MSCs in seven out of 15 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, light naphtha is produced during the distillation of crude oil and can be blended into finished gasoline products. Light naphtha is

composed of a hydrocarbon mixture and would not contain lead or lead-containing additives. Therefore, the presence of lead in soil is not the result of a release from GP R 276.

As shown on **Figure 10c**, benzene was detected above the applicable MSCs at multiple locations to the north and east of GP R 276, and adjacent to former piping to the west and south of this AST. 135TMB was detected at one location, GPR276-20, north of and adjacent to GP R 276. BaP was detected at one location, GPR276-16, beneath former piping south of GP R 276. At both locations, the 135TMB and BaP exceedances were identified in a sample collected in the subsurface (i.e., 3-3.5 and 4.5-5 ft bgs, respectively), while at least one shallower soil sample in the same boring did not identify concentrations of these constituents greater than the applicable MSCs. Since the 135TMB and BaP exceedance were identified at depth and shallower concentrations are below applicable MSCs, these deeper elevated concentrations of 135TMB and BaP cannot be the result of a surficial release from GP R 276.

Additionally, as shown on **Figures 12a, 12f,** and **12g**, the concentrations of benzene, 135TMB, and BaP detected during Site Assessment and Site Characterization sampling near GP R 276 are generally consistent with the constituent concentrations characterized across AOI 6 and AOI 7 by Evergreen, suggesting they are present in soil at these levels ubiquitously across the Facility rather than as a result of a release from the tank. Therefore, based on the range of concentrations in soil, their presence throughout the Facility, the depth of the sample with the 135TMB and BaP exceedances, and lack of evidence of a Post-2012 release(s) associated with GP R 276, the presence of these constituents in soil is concluded to be Pre-Existing Contamination.

As shown on **Figure 13**, one constituent (i.e., lead) was detected at concentrations above the applicable MSCs in groundwater at TG06-MW02. As discussed, in Section 4.3.2, the presence of lead in groundwater is Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.4 GP R 281

GP R 281 was formerly used to hold vacuum gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10d**. As shown, there were limited soil analytical results in the GP R 281 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 281, no constituents were detected at concentrations in soil above the applicable MSCs in any of the eight borings advanced by BDH. However, as discussed in Sections 3 and 4.1, free product and water were encountered beneath the concrete pad at this tank. Based upon these observations, PADEP was notified on January 12, 2023 of a potential release from this AST to the environment. Interim measures included recovering the observed free product and ponded water from beneath the tank foundation. Additionally, BDH collected a sample of the free product in January 2023 (see **Appendix H**). CQ of Santa Barbara, California was retained by BDH to conduct a forensic evaluation of the LNAPL analytical results. CQ's evaluation indicated that the LNAPL in the January 2023 sample was due to a release(s) that occurred approximately 18 to 28 years ago (~1995 – 2005).

As discussed in Section 2.6, Pre-September 2012 releases are known to have occurred at this tank, and this area is impacted with Pre-Existing Contamination. Based on the forensics dating of the January 2023 LNAPL sample (i.e., Pre-2012) and the two prior releases known to have occurred at this tank, the LNAPL contamination encountered by BDH in proximity to this AST is Pre-Existing Contamination.

4.3.2.5 GP R 282

GP R 282 was formerly used to hold vacuum gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10e**. As shown, there were limited soil analytical results in the GP R 281 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 282, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in two out of eight borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained vacuum gas oil like GP R 273, the presence of lead in soil is not the result of a release from GP R 282.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.6 GP R 284

GP R 284 was formerly used to hold vacuum gas oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10f**. As shown, there were limited soil analytical results in the GP R 284 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 284, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in one out of 15 borings advanced by BDH As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained vacuum gas oil like GP R 273 and GP R 282, the presence of lead in soil is not the result of a release from GP R 284.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.7 GP R 285

GP R 285 was formerly used to hold light naphtha. Analytical results for soil samples collected near this AST are depicted on **Figure 10g.** As shown, there were limited soil analytical results in the GP R 285 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 285, five constituents (i.e., benzene, ethyl benzene, 124TMB, 135TMB, and naphthalene) were detected at concentrations in soil above the applicable MSCs in three out of 12 borings advanced by BDH. As shown on **Figure 10g**, benzene was detected at concentrations greater than the applicable MSCs at three locations (i.e., GPR285-01, GPR285-07, and GPR285-13), which are located outside the tank boundary or along former associated piping. The exceedances of benzene were identified in samples collected in the subsurface (i.e., 2-2.5, 4-4.5, and 4.5-5 ft bgs). Shallower soil sample at GPR285-07 did not identify benzene at concentrations greater than the applicable MSCs. Ethyl benzene,

124TMB, 135TMB, and naphthalene were only detected above the applicable MSCs at one location (i.e., GPR285-07), which is located along associated former piping. The exceedances of these constituents were identified in a sample collected in the subsurface (i.e., 2-2.5 ft bgs), while shallower soil samples in the same boring did not identify these constituents at concentrations greater than the applicable MSCs. Since benzene, ethyl benzene, 124TMB, 135TMB, and naphthalene were identified at depth and shallower concentrations of these constituents are below the applicable MSCs, these deeper elevated concentrations cannot be the result of a surficial release from GP R 285.

Additionally, as shown in **Figures 12a, 12c, 12e, 12f** and **12h**, the concentrations of these constituents detected during Site Assessment and Site Characterization sampling near GP R 285 are also generally low and consistent with their range of concentrations characterized across AOI 6 and AOI 7 by Evergreen, suggesting they are present in soil at these levels ubiquitously across the Facility rather than as the result of a release from the tank. Therefore, based on the range of concentrations in soil, their presence throughout the Facility, the depth of the exceedances, and lack of evidence of a Post-2012 release(s) associated with GP R 285, the presence of these constituents in soil is assumed to be Pre-Existing Contamination.

As shown on **Figure 13**, one constituent (i.e., benzene) was detected at concentrations above the applicable MSCs in groundwater at TG06-MW04 during the initial sampling event in May 2024. Although elevated concentrations of benzene, ethyl benzene, 124TMB, and 135TMB were identified in shallower soil samples in the co-located boring GPR285-07, the deepest sampled interval, 9.5-10.0 ft bgs, did not contain concentrations of benzene or other constituents above the applicable MSCs. The soil analytical results indicate benzene, or any other constituent that exceeded the applicable MSCs at this boring, in soil has not reached the water table at concentrations greater than the SGW MSCs, and therefore, the groundwater contamination identified in TG06-MW04 is not related to the tank. Since there is no specific evidence of a Post-September 2012 release near this tank and because benzene is known to be present in groundwater in this area through Evergreen's Act 2 work, the presence of benzene in groundwater is concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.8 GP R 1038

GP R 1038 was formerly used to hold alky slurry. Analytical results for soil samples collected near this AST are depicted on **Figure 10h**. As shown, there were no soil analytical results in the GP R 1038 area collected by Evergreen. The Site Assessment and Site Characterization data provides new information about the nature and extent of contamination in soil in this area.

At GP R 1038, two constituents (i.e., naphthalene and lead) were detected at concentrations in soil above the applicable MSCs in six out of 12 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, alky slurry is a byproduct of alkylation, which is a chemical reaction used to produce high-octane gasoline components (i.e., alkylates). The alkylation process combines hydrocarbons and isobutane together, which would not contain lead or lead-containing additives. Therefore, the presence of lead in soil is not the result of a release from GP R 1038.

As shown on **Figure 10h**, naphthalene was only detected above the applicable MSCs at one location (i.e., GPR1038-04) along the western edge of the tank in surface soil. As shown on **Figure 12h**, the concentrations of naphthalene detected during Site Assessment and Site Characterization sampling near GP R 1038 are also generally consistent with concentrations characterized across AOI 6 and AOI 7 by Evergreen, suggesting it is present in soil at these levels ubiquitously across the Facility rather than as a result of a release from the tank. Given the low exceedance rate, range of concentrations, presence throughout the Facility, and lack of evidence of a Post-2012 release(s) associated with GP R 1038, the presence of naphthalene in soil near GP R 1038 is Pre-Existing Contamination.

As shown on **Figure 13**, one constituent (i.e., lead) was detected at concentrations above the applicable MSCs in groundwater at TG06-MW05. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.9 GP R 1101

GP R 1101 was formerly used to hold recovered oil. Analytical results for soil samples collected near this AST are depicted on **Figure 10i**. As shown, there were no soil analytical results in the GP R 1101 area collected by Evergreen. The Site Assessment and Site Characterization data provides new information about the nature and extent of contamination in soil in this area.

At GP R 1101, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in one out of 10 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained recovered oil like GP R 270, the presence of lead in soil is not the result of a release from GP R 1101.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.10 GP R 494

GP R 494 was formerly used to hold main frac bottoms. Analytical results for soil samples collected near this AST are depicted on **Figure 11a**. As shown, there were no soil analytical results in the GP R 494 area collected by Evergreen. The Site Assessment and Site Characterization data provides new information about the nature and extent of contamination in soil in this area.

At GP R 494, two constituents (i.e., BaP and lead) were detected at concentrations in soil above the applicable MSCs in two out of nine borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, main frac bottoms represent the heaviest product stream from the bottom of the main fractionation column of the catalytic cracking of heavy gas oils. This product consists of highly viscous hydrocarbons and would not contain lead or lead-containing additives. Therefore, the presence of lead in soil is not the result of a release from GP R 494.

As shown on **Figure 11a**, BaP was only detected above the applicable MSCs at one location (i.e., GPR494-08) along the associated former piping in a sample collected in the subsurface (i.e., 3-3.5 ft bgs), while a shallower soil sample in the same boring did not identify BaP concentrations greater than the applicable

MSCs. Since the BaP exceedance was identified at depth (i.e., 3 ft bgs) and shallower BaP concentrations are below the applicable MSCs, this deeper elevated concentration of BaP cannot be the result of a surficial release from GP R 494.

Additionally, as shown in **Figure 12g**, the concentration of BaP detected during Site Assessment and Site Characterization sampling near GP R 494 are also generally consistent with their range of concentrations characterized across AOI 6 and AOI 7 by Evergreen, suggesting it is present in soil at these levels ubiquitously across the Facility rather than as a result of a release from the tank. Therefore, based on its low exceedance rate, the range and spatial distribution of BaP concentrations, its presence throughout the Facility, the depth of the sample with the BaP exceedance, and lack of evidence of a Post-2012 release(s) associated with GP R 494, the presence of BaP in soil near GP R 494 is Pre-Existing Contamination.

As shown on **Figure 13**, no constituents were detected at concentrations above the applicable MSCs in groundwater at TG07-MW-01.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.11 GP R 790

GP R 790 was formerly used to hold benzene. Analytical results for soil samples collected near this AST are depicted on **Figure 11b**. As shown, there were limited soil analytical results in the GP R 790 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

As shown on **Figure 11b**, two constituents (i.e., benzene and toluene[20]) were detected at concentrations in soil above the applicable MSCs in six out of eight borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of benzene and toluene in soil at this tank is considered Pre-Existing Contamination.

As shown on **Figure 13**, three constituents (i.e., benzene, cumene, and 12DCA) were detected at concentrations above the applicable MSCs in groundwater at TG07-MW-05. Given the presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of these constituents in groundwater is concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

[20] Since the primary contents of GP R 790 is benzene, benzene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene).

4.3.2.12 GP R 791

GP R 791 was formerly used to hold benzene. Analytical results for soil samples collected near this AST are depicted on **Figure 11b**. As shown, there were no soil analytical results in the GP R 791 area collected by Evergreen. The Site Assessment and Site Characterization data provides new information about the nature and extent of contamination in soil in this area.

As shown on **Figure 11b**, two constituents (i.e., benzene and cumene[21]) were detected at concentrations in soil above the applicable MSCs in eight out of nine borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of benzene and cumene in soil at this tank is considered Pre-Existing Contamination.

BDH did not collect a groundwater sample at this AST as LNAPL was identified at its associated monitoring well (i.e., TG07-MW-06). Given the presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of LNAPL near this tank is concluded to be Pre-Existing Contamination. Copies of Evergreen gauging information, BDH and Evergreen LNAPL results, and BDH LNAPL forensic analysis are included as **Appendix F**, **Appendix H,** and **Appendix I**, respectively.

Due to the presence of LNAPL in the monitoring well which has been determined to be Pre-Existing Contamination, dissolved phase groundwater contamination in the area surrounding the AST is also considered Pre-Existing Contamination.

The soil, groundwater, and LNAPL contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.13 GP R 792

GP R 792 was formerly used to hold cumene. Analytical results for soil samples collected near this AST are depicted on **Figure 11b**. As shown, there were limited soil analytical results in the GP R 792 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

As shown on **Figure 11b**, one constituent (i.e., cumene[22]) was detected at concentrations in soil above the applicable MSCs in five out of seven borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is

[21] Since the primary contents of GP R 791 is benzene, benzene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene).

[22] Since the primary contents of GP R 792 is cumene, cumene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene). Cumene was still the only constituent identified above the applicable MSCs.

part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of cumene in soil at this tank is considered Pre-Existing Contamination.

BDH did not install a monitoring well at this AST because wells installed by Evergreen and BDH were already present in the vicinity. The sampling performed by Evergreen provides information about the nature and extent of contamination in groundwater in this area. Six constituents (i.e., benzene, cumene, toluene, BaP, BghiP, naphthalene, and lead) were detected at concentrations above the applicable MSCs in groundwater at B-150 and B-177,[23] which are wells located immediately downgradient of GP R 792. Given the presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of these constituents in groundwater is concluded to be Pre-Existing Contamination.

LNAPL has not been identified at B-177 but has been encountered multiple times at B-150. The observation of LNAPL at this well is consistent with the estimated extent of Pre-Existing LNAPL shown on **Figure 5**. Given the presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of LNAPL near this tank is concluded to be Pre-Existing Contamination.

The soil, groundwater, and LNAPL contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.14 GP R 793

GP R 793 was formerly used to hold cumene. Analytical results for soil samples collected near this AST are depicted on **Figure 11b**. As shown, there were limited soil analytical results in the GP R 793 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

As shown on **Figure 11b**, one constituent (i.e., cumene[24]) was detected at concentrations in soil above the applicable MSCs in four out of six borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of cumene in soil at this tank is considered Pre-Existing Contamination.

BDH did not install a monitoring well at this AST because wells installed by Evergreen and BDH were already present in the vicinity. The sampling performed by BDH provides information about the nature and extent of contamination in groundwater in this area. Specifically, four constituents (i.e., benzene, cumene, toluene, and naphthalene) were detected at concentrations above the applicable MSCs in groundwater at TG07-MW-07, which is a well located immediately downgradient of GP R 793. Given the

[23] Considering only parameters within PADEP's Short List 1-6 and concentrations from the two most recent groundwater sampling events post-September 8, 2012.

[24] Since the primary contents of GP R 793 is cumene, cumene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene). Cumene was still the only constituent identified above the applicable MSCs.

presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of these constituents in groundwater is concluded to be Pre-Existing Contamination.

LNAPL was also identified in TG07-MW-07 during the second gauging event completed by BDH in February 2023. The LNAPL sample collected from this well was characterized as likely being linked to the product, or potential waste, of the reformate formulation process and naphtha-like to light distillate range. Tetraethyl lead was also detected in the LNAPL sample. Given the presence of Pre-Existing Contamination at the 700 Series Tanks, the presence of LNAPL near this tank is consistent with Pre-Existing Contamination in the area. LNAPL results and LNAPL forensic analysis are provided in **Appendix H** and **Appendix I**, respectively.

The soil, groundwater, and LNAPL contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.15 GP R 794

GP R 794 was formerly used to hold TEG. Analytical results for soil samples collected near this AST are depicted on **Figure 11b**. As shown, there were limited soil analytical results in the GP R 794 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

As shown on **Figure 11b**, seven constituents (i.e., benzene, cumene, ethyl benzene, toluene, 124TMB, 135TMB, and naphthalene) were detected at concentrations in soil above the applicable MSCs in eight out of nine borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of these constituents in soil at this tank is considered Pre-Existing Contamination.

TG07-MW-07 is the closest monitoring well to GP R 794. Groundwater data for TG07-MW-07 are discussed above; this well is also the closest monitoring well to GP R 793. As discussed above, the groundwater contamination and LNAPL encountered at this well is consistent with Pre-Existing Contamination in the area.

The soil, groundwater, and LNAPL contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.16 GP R 798

GP R 798 was formerly used to hold benzene. Analytical results for soil samples collected near this AST are depicted on **Figure 11c**. As shown, there were limited soil analytical results in the GP R 798 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

As shown on **Figure 11c**, one constituent (i.e., benzene[25]) was detected at concentrations in soil above the applicable MSCs in six out of seven borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of these constituents in soil at this tank is considered Pre-Existing Contamination.

As shown on **Figure 13**, one constituent (i.e., benzene) was detected at concentrations above the applicable MSCs in groundwater at TG07-MW-04. Given the presence of Pre-Existing Contamination at the 700 Series Tanks and the lack of evidence of a Post-2012 release in this area, the presence of this constituent in groundwater is concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.17 GP R 799

GP R 799 was formerly used to hold benzene. Analytical results for soil samples collected near this AST are depicted on **Figure 11c**. As shown, there were no soil analytical results in the GP R 799 area collected by Evergreen. The Site Assessment and Site Characterization data provides new information about the nature and extent of contamination in soil in this area.

As shown on **Figure 11c**, one constituent (i.e., benzene[26]) was detected at concentrations in soil above the applicable MSCs in all eight borings advanced by BDH, which are located within or adjacent to the former tank boundary and along associated former piping. As discussed in Section 2.6, this tank is part of the 700 Series Tanks where Pre-Existing Contamination is known to be located, and, accordingly, the presence of these constituents in soil at this tank is considered Pre-Existing Contamination.

TG07-MW-04, TG07-MW-05, and TG07-MW-06 are the closest monitoring wells to GP R 799. Groundwater data for TG07-MW-04, TG07-MW-05, and TG07-MW-06 are discussed above; these wells are also the closest monitoring wells to other 700 Series Tanks. As discussed above, the groundwater contamination and LNAPL encountered at these wells are Pre-Existing Contamination.

The soil, groundwater, and LNAPL contamination identified in proximity to this AST is Pre-Existing Contamination.

[25] Since the primary contents of GP R 798 is benzene, benzene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene). Benzene was still the only constituent identified above the applicable MSCs.

[26] Since the primary contents of GP R 799 is benzene, benzene was the only constituent analyzed during Site Assessment sampling at this tank. However, during Site Characterization sampling, a select list of VOCs and SVOCs in PADEP's Short List 1-6 were analyzed (i.e., benzene, cumene, ethyl benzene, MTBE, 135TMB, 135TMB, toluene, xylenes, BaP, and naphthalene). Benzene was still the only constituent identified above the applicable MSCs.

4.3.2.18 GP R 1116

GP R 1116 was formerly used to hold UDEX feed. Analytical results for soil samples collected near this AST are depicted on **Figure 11d**. As shown, there were limited soil analytical results in the GP R 1116 area collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP R 1116, two constituents (i.e., benzene and lead) were detected at concentrations in soil above the applicable MSCs in two out of 16 borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, UDEX feed is a hydrocarbon mixture that is fed into the UDEX process. The UDEX process extracts aromatics from hydrocarbon streams utilizing the interaction between the UDEX feed and a solvent (i.e., polyethylene glycol). UDEX feed is composed of hydrocarbons and does not contain lead or lead-containing additives. Therefore, the presence of lead in soil is not the result of a release from GP R 1116.

As shown in **Figure 11d**, benzene was only detected above the applicable MSCs at one location (i.e., GPR1116-08) adjacent to the former tank boundary. As shown on **Figure 12a**, the concentrations of benzene detected during Site Assessment and Site Characterization sampling near GP R 1116 are also generally consistent with benzene concentrations characterized across AOI 6 and AOI7 by Evergreen, suggesting it is present in soil at these levels ubiquitously across the Facility rather than as a result of a release from the tank. Given the low exceedance rate, range of concentrations, its presence throughout the Facility, and lack of evidence of a Post-2012 release(s) associated with GP R 1116, the presence of benzene in soil near GP R 1116 is Pre-Existing Contamination.

As shown on **Figure 13**, no constituents were detected at concentrations above the applicable MSCs in groundwater at TG07-MW-03. LNAPL was not identified in TG07-MW-03.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.19 GP R 1117

GP R 1117 was formerly used to hold UDEX feed. Analytical results for soil samples collected near this AST are depicted on **Figure 11d**. As shown, there were no soil analytical results in the GP R 1117 area collected by Evergreen. The Site Assessment and Site Characterization provides new information about the nature and extent of contamination in soil in this area.

At GP R 1117, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in three out of eight borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained UDEX feed like GP R 1116, the presence of lead in soil is not the result of a release from GP R 1117.

The soil contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.2.20 GP U 767

GP U 767 was formerly used to hold recovered oil. Analytical results for soil samples collected near this AST are depicted on **Figure 11e**. As shown, there were limited soil analytical results in the GP U 767 area

collected by Evergreen. The Site Assessment and Site Characterization data provides more detailed information about the distribution of constituent concentrations in soil.

At GP U 767, one constituent (i.e., lead) was detected at concentrations in soil above the applicable MSCs in one out of seven borings advanced by BDH. As discussed, in Section 4.3.2, the presence of lead in soil is Pre-Existing Contamination. Additionally, as the AST contained recovered oil like GP R 270 and GP R 1101, the presence of lead in soil is not the result of a release from GP U 767.

As shown on **Figure 13**, one constituent (i.e., cumene) was detected at concentrations above the applicable MSCs in groundwater at TG07-MW-08. Since there is no specific evidence of a Post-September 2012 release near this tank and because cumene is known to be present in groundwater in this area through Evergreen's Act 2 work, the presence of cumene in groundwater is concluded to be Pre-Existing Contamination.

The soil and groundwater contamination identified in proximity to this AST is Pre-Existing Contamination.

4.3.3 Allocation Summary

The data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental sampling data for the Facility to determine whether contamination detected during Site Assessment and Site Characterization sampling is (1) Pre-Existing Contamination, (2) Post-September 2012 Contamination associated with a release from an AST, or (3) Post-September 2012 Contamination not associated with a release from an AST. As discussed in Section 4.3.2, Site Assessment and Site Characterization sampling has identified Pre-Existing Contamination which is in line with currently observed conditions. As agreed, the contamination identified by the Site Assessment and Site Characterization sampling will be addressed by Evergreen under their existing Act 2 Sites (eFACTS PF No. 769099 [AOI 6], 750870 [AOI 7], and 780190 [Philadelphia Refinery Sitewide]) (Pre-Existing Contamination). Accordingly, BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

4.4 Ecological Screening Evaluation

Though the contamination identified in Tank Group 06 and 07 has been determined to be Pre-Existing Contamination and Stantec completed a Facility-wide Screening Level Ecological Risk Assessment (Stantec 2025b), which was approved by PADEP in May 2025, in accordance with 25 Pa. Code § 245.310(a)(28), an ecological screening evaluation was performed and conducted at the Site. The following describes the ecological screening evaluation that was performed for the Site. This evaluation was conducted in accordance with Section II.B.5 of the *Land Recycling Program Technical Guidance Manual* (PADEP 2021a). The regulatory framework for conducting an ecological screening evaluation under the SHS is outlined in Section II.B.2(e) and summarized in the Ecological Screening Flow Chart provided in Figure II-16 of the *Land Recycling Program Technical Guidance Manual* (PADEP 2021a). The key elements of the screening procedure are comprised of nine steps.

The initial screening phase of the process consists of Step 1, as follows:

- Step 1: Presence of Light Petroleum Product Constituents

As indicated on Figure II-16 of the L*and Recycling Program Technical Guidance Manual* (PADEP 2021a), after completion of the initial screen (Step 1), the remediator may be able to determine that no further ecological screening is required.

Step 1: Presence of Light Petroleum Product Constituents

The first step in the ecological screening process is to determine whether the constituents present in on-Site surface soil (soil at a depth of up to 2 ft) or sediment are related only to light petroleum products (i.e., gasoline, jet fuel A, kerosene, #2 fuel oil/diesel fuel), which have relatively low polycyclic aromatic hydrocarbon content (American Society for Testing and Material [ASTM] International E1739-95). If light petroleum product constituents (including benzene, toluene, ethyl benzene, and xylenes [total]) are the only constituents detected on-Site, then the screening process moves to Step 9 (Final Report: No Further Ecological Evaluation Required). As discussed in Section 4.3.1.1, light petroleum product constituents are present in the surface soil samples as well as lead. However, since lead is the only non-light petroleum product present in surface soil at concentrations greater than the applicable MSCs and BDH is not responsible for lead since it is Pre-Existing Contamination, no further ecological evaluation is required.

4.5 Data Quality Assurance, Quality Control, and Usability

While the Site Assessment and Characterization analytical data were not subject to formal data validation, elements were included to help assess data quality and usability of the results to support the project objectives. This included the collection of quality assurance/quality control samples, general quality control checks on the field and laboratory information, and an assessment of the impact of elevated reporting limits (RL) due to sample-specific interferences.

4.5.1 Quality Assurance/Quality Control Samples

During the Site Assessment/Characterization field activities, one trip blank sample per sample cooler and approximately one field blank per 10 samples was submitted to the analytical laboratory to evaluate potential cross-contamination during sample container shipment and storage. Results of the quality assurance and quality control sample analyses are provided in **Appendix H**. Ethyl benzene, toluene, xylenes, anthracene, BaP, Bbf, BghiP, fluorene, indeno, naphthalene, phenanthrene, and lead were detected in blank samples at concentrations greater than the laboratory RLs. These concentrations are within the range of constituent concentrations identified in the Tank Group 06 and 07 area. Because (1) the majority of the concentrations reported for the field blanks were below the laboratory RLs (i.e., J qualified) and (2) the contamination identified in Tank Group 06 and 07 has been determined to be Pre-Existing Contamination, these detections do not impact Site Assessment, Site Characterization, or associated cleanup decisions.

Approximately one field duplicate sample per every 20 soil samples was also collected to evaluate the variance in the sampling/analysis. Relative percent differences (RPD) for duplicate pairs were calculated and ranged from 0 to 199 percent with an average of 57 and 86 percent in Tank Group 06 and Tank

Group 07, respectively. Overall, RPDs <50 percent generally represent the typical level of variability. Reasons for a higher RPD can include sample heterogeneity or samples with high concentrations. Given that the predominant soil type sampled is anthropogenic fill some additional variability is expected and reasonable.

Approximately one field duplicate sample per every 20 groundwater samples was also collected to evaluate the variance in the sampling/analysis. RPDs for duplicate pairs were calculated and ranged from 0 to 199 percent with an average of seven percent in Tank Group 07.[27] Overall, RPDs <50 percent generally represent the typical level of variability.

4.5.2 General Quality Control Checks

General quality control checks were also performed on the field information and laboratory analytical deliverables. This included checking and reviewing laboratory logins and completed chains of custody, confirming that the requested analyte lists were reported, and that the sample nomenclature conformed to the proposed sampling scope of work. In some cases, multiple analyses were reported by the laboratory and a general review of elements such as surrogate recoveries, qualifiers, analytical limits, and laboratory narratives were performed to identify which results would be used for a given sample. A log of these general checks is provided in **Appendix H** along with the methodology used to select between multiple results when provided by the analytical laboratory.

4.5.3 Reporting Limits

For non-detect COCs, RLs were evaluated against the applicable MSCs. The maximum RLs for four COCs were above the MSCs, as summarized in the table below.

Reporting Limits Greater than MSCs

COC	Maximum Analytical Limits (mg/kg)	Non-Res DC MSC (mg/kg)	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC (mg/kg)
12DBA	8.7	3.7	0.005
12DCA	17	85	0.5
Benzene	2.8	280	0.5
MTBE	35	8,500	2

Based on prior discussions with Alpha Analytical, Inc. (now Pace Analytical) and other PADEP-certified laboratories, USEPA Method 8260 provides laboratories with the ability to run the analysis via high-level or low-level vials, which is dependent on sample-specific conditions (i.e., interferences from non-target analytes). Samples may need to be diluted to be run via the high-level vial if an abundance of non-target analytes are present in the sample. In these situations, running via the low-level vial is not possible due to the non-target analyte interferences. This dilution results in higher method detection limits and RLs

[27] Field duplicates were not collected for groundwater samples in Tank Group 06.

for samples. Due to sample-specific conditions, resampling and reanalyzing soil to assess whether these compounds are present in soil is not a viable solution.

The maximum RLs for 12DBA, 12DCA, benzene, and MTBE exceeded the applicable MSCs. Exceedance rates were low for 12DCA, benzene, and MTBE (i.e., 5.6, 1.2, and 6.9 percent, respectively). The exceedance rate for 12DBA was higher at 25.8 percent. The locations with elevated RLs often coincide or are nearby samples of locations with concentrations exceeding the applicable MSCs for other chemicals, indicating no impact on Site Characterization conclusions or associated cleanup decisions. In situations where these locations are not in the vicinity of other locations with concentrations exceeding applicable MSCs, they are delineated by other locations with concentrations below the applicable MSCs or the tank containment berms. As the contamination identified in Tank Group 06 and 07 has been determined to be Pre-Existing Contamination, these exceedances also do not impact Site Characterization or associated cleanup decisions.

As discussed in Section 4.3.2, even if present due to a release(s) from a tank, since 12DBA and 12DCA were historically used as a scavenger for lead in anti-knock gasoline mixtures and up until the ban of leaded gasoline in the 1990s could have been present in gasoline-related releases to the environment, these concentrations would be associated with Pre-Existing Contamination. Similarly, since MTBE was phased out of use in 2006, these concentrations would be associated with Pre-Existing Contamination.

5 Selection of Standard

As described in Section 4.3.2, the data collected as part of the Site Assessment and Site Characterization activities have been evaluated in the context of other information and environmental analytical data for the Facility. These sampling efforts have identified Pre-Existing Contamination which is in line with currently observed conditions. As agreed, the contamination identified by the Site Assessment and Site Characterization sampling will be addressed under Act 2 by Evergreen (Pre-Existing Contamination).

Accordingly, a specific Standard for attainment has not been identified and BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

6 Conceptual Site Model

6.1 Land and Groundwater Use

The area encompassing Tank Group 06 and 07 is being redeveloped. Current and reasonably anticipated future land use in the area of the Tank Groups is commercial/industrial.

Sampling and evaluation of the vapor intrusion pathway has not been conducted since there is no current vapor intrusion exposure in the area (i.e., vapor intrusion pathway is incomplete). In order to address the requirements under 25 Pa. Code § 245.309(c)(12), as referenced by 25 Pa. Code § 245.310(a) and 245.310(a)(32), as an institutional control, prior to their construction and occupancy, on-facility buildings which could be occupied in the future will be subject to vapor intrusion investigation and evaluation to determine if conditions (i.e., volatilization of COCs from soil, groundwater, and/or LNAPL) could pose an unacceptable risk to occupants. As needed, vapor mitigation systems (VMS) will be incorporated into the design and construction of such buildings as engineering controls where potentially unacceptable vapor intrusion risks are identified. These activities and use limitations will eliminate the potential for future unacceptable exposures to COCs at the Site via vapor intrusion.

Stemming from several efforts to assess the potential for current and reasonably anticipated future use of groundwater at and in the vicinity of the Facility in accordance with 25 Pa. Code § 245.310(a)(27), Evergreen has documented no confirmed drinking water supply wells within 1-mile of the Facility. As a result, groundwater on-Facility and off-Facility is not a current or reasonably anticipated future source of potable or nonpotable water.

6.2 Scenarios for Potential Human Exposure

Though the contamination identified at the Site is determined to be Pre-Existing Contamination, in accordance with 25 Pa. Code § 245.309(c)(14), § 245.310(a)(23), this section identifies potentially exposed populations (receptors) and their potential exposure pathways.

6.2.1 Potential On-Site Exposures

The current on-Site receptors include construction workers who may become exposed during site redevelopment or major construction activities and to a limited extent, trespassers, since access to the Facility is controlled with fencing and site security.

Reasonably anticipated future receptors at and in the immediate vicinity of the Site could include workers who may be exposed during the performance of typical or routine commercial activities (routine workers), maintenance workers who may become exposed during maintenance activities including minor subsurface repair/utility activities, construction workers, and trespassers.

Routine workers and trespassers could be exposed to COCs through incidental ingestion and dermal contact with COCs in exposed surface soil, inhalation of COCs in vapors and particulates from exposed surface soil, and inhalation of COCs in vapors from subsurface soil. Exposure of maintenance and construction workers could include incidental ingestion and dermal contact with COCs in exposed

surface and subsurface soil, inhalation of COCs in airborne particulates and vapors from exposed surface soil, and inhalation of COCs in vapors from subsurface soil.

Additionally, potential vapor intrusion exposure of routine workers, maintenance workers, construction workers, and trespassers could include exposure to COCs in vapors from both exposed surface soil and subsurface soil. However, such exposure is not currently a significant concern or anticipated to be one in the future, as BDH plans to address and eliminate potential risks via establishing environmental covenants and vapor mitigation systems as needed.

6.2.2 Potential Off-Site Exposures

Potential off-Site receptors under current and future conditions may include receptors who are off-Facility, or receptors who are off-Site (i.e., located outside of the Tank Groups), but still within other portions of the Facility. Off-Site receptors could include off-Facility residents, routine workers, construction workers, and maintenance workers. Potential exposure of off-Facility residents could include inhalation of COCs in airborne particulates and/or vapors from on-Site soil.

6.3 Species and Habitats of Concern

In accordance with 25 Pa. Code § 245.309(c)(5) and § 250.311(a), an ecological screening evaluation was performed and conducted at the Site. As discussed in Section 4.4, no further ecological evaluation is required.

6.4 Groundwater Contamination and the Significance of Fate and Transport

Though the contamination identified at the Site is determined to be Pre-Existing Contamination, in accordance with 25 Pa. Code §245.310(a)(23), the fate and transport of groundwater contamination in the Tank Group 06 and 07 area is discussed in this Section.

More than 200 groundwater monitoring or recovery wells have been installed within or near Tank Group 06 and 07 as part of prior investigations performed at the Facility. As discussed in the AOI 6 and AOI 7 RIRs (GHD 2017a; GHD 2017c), the aerial extent of groundwater contamination in the unconfined aquifer has been the result of groundwater flow along hydraulic head gradients and lower permeability soil beneath tanks. Groundwater and LNAPL recovery and in-situ remediation systems were installed in the northern portion of Tank Group 06 (i.e., No. 3 Separator Area – Girard Point), adjacent to the Schuylkill River and central portion of Tank Group 07 (i.e., 27 Pump House Passive Remediation System), south of the 700 Series Tanks. These systems have been effective in recovering LNAPL and in controlling the migration of groundwater contamination.

Because of the complexity associated with comingled impacts from a variety of sources and complicated hydrogeologic/groundwater flow conditions, Evergreen evaluated the nature and extent of groundwater contamination and its potential future fate and transport across the entire Facility in their 2025 Fate and Transport RIR (Stantec 2025a), which was approved by PADEP in April 2025 (PADEP 2025). The fate and transport modeling supplemented the extensive groundwater analytical data which, as noted by

Evergreen in their 2025 Fate and Transport RIR (Stantec 2025a), PADEP considered complete and sufficient to assess risks to human and ecological receptors. The fate and transport assessment, which involved predictive 30-year simulations of dissolved phase indicator parameters[28] (i.e., benzene, MTBE, naphthalene, BaP, and lead) under the conservative assumptions (i.e., sources of contamination will remain and assuming the remediation system wells are not pumping) demonstrates that the dissolved phase plumes will remain relatively stable or decrease in size and concentration over time through natural attenuation processes.

[28] As discussed in the AOI 6 RIR (GHD 2017c), the AOI 7 RIR (GHD 2017a), and the 2025 Fate and Transport RIR (Stantec 2025a), of the list of site-related constituents identified in groundwater, benzene and MTBE were chosen as the primary chemicals (qualitative proxies for other constituents) because of their water solubility, potential to be mobile in groundwater, and their persistence in groundwater at and near the Facility. MTBE was phased out of use in the early 2000s. As of 2006, MTBE has not been used in significant quantities as an additive to gasoline. As a result, the presence of MTBE in soil and groundwater helps to identify contamination that is associated with historical releases (e.g., pre-2006).

7 Summary and Conclusions

Terraphase has prepared this Report, on behalf of BDH, to detail the results of the Site Assessment and Site Characterization activities and to provide the supporting information demonstrating that adequate characterization has been performed for a reliable determination of the need for remedial measures based on the selected standard.

The Site Assessment and Site Characterization activities described in this Report were performed in accordance with the applicable provisions of Act 32, 25 Pa. Code § 245 (Subchapter D), and Terraphase's Work Plan (2021). The 28 ASTs addressed in this Report are:

- GP R 1039 (PADEP No. 049A)
- GP R 1038 (PADEP No. 050A)
- GP R 1047 (PADEP No. 011A)
- GP R 973 (PADEP No. 066A)
- GP R 286 (PADEP No. 028A)
- GP R 276 (PADEP No. 023A)
- GP R 281 (PADEP No. 025A)
- GP R 1117 (PADEP No. 005A)
- GP R 791 (PADEP No. 006A)
- GP R 798 (PADEP No. 007A)
- GP R 494 (PADEP No. 029A)
- GP R 1116 (PADEP No. 030A)
- GP R 1088 (PADEP No. 033A)
- GP R 250 (PADEP No. 019A)[29]
- GP R 285 (PADEP No. 027A)
- GP R 270 (PADEP No. 021A)
- GP R 272 (PADEP No. 022A)
- GP R 1101 (PADEP No. 047A)
- GP R 273 (PADEP No. 003A)
- GP R 284 (PADEP No. 004A)
- GP R 282 (PADEP No. 026A)
- GP R 790 (PADEP No. 034A)
- GP R 792 (PADEP No. 035A)
- GP R 793 (PADEP No. 036A)
- GP R 794 (PADEP No. 037A)
- GP R 799 (PADEP No. 039A)
- GP U 767 (PADEP No. 046A)
- GP R 251 (PADEP No. 020A)[29]

Visual observations of the on-site ASTs revealed no indications of release in the Categories 1 or 2 tanks, with the exception of GP R 281 in Tank Group 06. Interim actions and soil sampling indicate that the release identified at GPR 281 has been characterized to applicable MSCs.

Category 1 tanks (i.e., GP R 2000, GP U 1158, GP U 894, GP R 3003, GP R 3101A, GP R 2500, GP R 2501, GP 75A, GP 76A, GP 77A, GP 78A, GP R 796, GP U 1221, and GP 79A) showed no signs of release and remain classified as Category 1.

Based on the results of soil samples collected during the Site Assessment of Category 2 ASTs and a comparison to the applicable MSCs, no evidence of a release from five tanks (i.e., GP R 272, GP R 286, GP R 973, GP R 1039, and GP R 1047) in Tank Group 06 and three tanks (i.e., GP R 250, GP R 251, and GP R 1088) in Tank Group 07 were identified. These tanks remain classified as Category 2.

[29] Associated with Tank Group 07A.

The remaining eight tanks (i.e., GP R 270, GP R 273, GP R 276, GP R 281, GP R 282, GP R 284, GP R 285, GP R 1038, and GP R 1101) in Tank Group 06 and eleven tanks (i.e., GP R 494, GP R 790, GP R 791, GP R 792, GP R 793, GP R 794, GP R 798, GP R 799, GP R 1116, GP R 1117, and GP U 767) in Tank Group 07 identified concentrations in soil above the applicable MSCs and additional notifications of release were submitted to PADEP under Incident No. 58434 and Incident No. 57973, respectively. However, as discussed in Sections 4.3.2 and 4.3.3, Site Assessment and Site Characterization sampling have identified Pre-Existing Contamination at these tanks. Accordingly, the contamination identified by the Site Assessment and Site Characterization sampling in Tank Group 06 and Tank Group 07 will be addressed by Evergreen under their existing Act 2 Sites (eFACTS PF No. 769099 [AOI 6], 750870 [AOI 7], and 780190 [Philadelphia Refinery Sitewide]). Therefore, BDH will not be issuing a RAP per 25 Pa. Code § 245.311.

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Tables

1 Aboveground Storage Tank Details
2a Monitoring Well Gauging Summary (April 2024) – Tank Group 06
2b Monitoring Well Gauging Summary (May 2024) – Tank Group 06
2c Monitoring Well Gauging Summary (June 2024) – Tank Group 06
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3 Soil Screening Summary (Site Assessment, Site Characterization)
4 Groundwater Screening Summary (Site Characterization)

Table 1
Aboveground Storage Tank Details
Tank Closure Details
Bellwether District Holdings, LLC, Philadelphia, PA

Facility	Tank Group	State Regulation Number	Tank Number	Design Capacity (gal)	Primary Product	Proposed Analyte List	Regulatory Status	Facility ID	Tank Type	Double Bottom	Diameter (ft)	Height (ft)	Remaining Liquid (gal)	GPS Survey Complete	Demo Complete	Storage Tanks Reg./Permit App Form Submitted	Release Notification	Incident No.	Int. Remedial/ Corrective Action Required
Girard Point	6	050A	GP R 1038	126,000	Alky Slurry	Short List 1-5, pH	R	51-33624	Cone Roof	N	25	36			Y	3/30/2022	7/18/2023	58434	
Girard Point	6	049A	GP R 1039	126,000	#6 Fuel Oil	Short List 5	R	51-33624	Cone Roof	N	25	36			Y	3/30/2022			
Girard Point	6	011A	GP R 1047	158,340	Caustic, Fresh	pH	R	51-33624	Open Top	N	30	30		Y	Y	7/13/2022			
Girard Point	6	047A	GP R 1101	84,000	Recovered Oil	Short List 1-6	R	51-33624	IFR	N	25	24		Y	Y	7/13/2022	1/25/2024	58434	
Girard Point	6	021A	GP R 270	3,078,012	Recovered Oil	Short List 1-6	R	51-33624	IFR	Y	120	40		Y	Y*	3/30/2022	1/4/2023	58434	
Girard Point	6	022A	GP R 272	3,045,000	Recovered Oil	Short List 1-6	R	51-33624	IFR	Y, Removed	120	40		Y	Y	9/9/2022			
Girard Point	6	003A	GP R 273	3,385,200	Vacuum Gas Oil	Short List 1-5	R	51-33624	Cone Roof	N	120	40		Y	Y	5/31/2023	7/18/2023	58434	
Girard Point	6	023A	GP R 276	3,045,000	Light Naphtha	Short List 1-5	R	51-33624	IFR	Y	120	40		Y	Y*	4/27/2022	1/4/2023	58434	
Girard Point	6	025A	GP R 281	3,385,200	Vacuum Gas Oil	Short List 1-5	R	51-33624	Cone Roof	Y	120	40		Y	Y*	4/27/2022	1/12/2023	58434	Y
Girard Point	6	026A	GP R 282	3,385,200	Vacuum Gas Oil	Short List 1-5	R	51-33624	Cone Roof	Y	120	40		Y	Y*	5/17/2022	1/4/2023	58434	
Girard Point	6	004A	GP R 284	3,385,200	Vacuum Gas Oil	Short List 1-5	R	51-33624	Cone Roof	Y	120	39.75		Y	Y*	5/17/2022	1/4/2023	58434	
Girard Point	6	027A	GP R 285	3,045,000	Light Naphtha	Short List 1-5	R	51-33624	IFR	Y	120	40		Y	Y*	5/17/2022	1/4/2023	58434	
Girard Point	6	028A	GP R 286	3,045,000	Heavy Naphtha	Short List 1-5	R	51-33624	IFR	Y	120	40		Y	Y*	5/17/2022			
Girard Point	6	066A	GP R 973	53,004	Caustic, Fresh	pH	R	51-33624	Cone Roof	N	19	25			Y	6/6/2022			
Girard Point	6	010A	GP R 2000	3,570	Caustic, Fresh	N/A	R	51-33624	Horiz, Elev	N	6	15			Y	8/26/2021			
Girard Point	6	014A	GP U 1158	4,410	Acid, Phosphoric	N/A	R	51-33624	Dome Roof	N	10	10			Y	7/1/2024			
Girard Point	6	044A	GP U 894	8,022	Caustic, Fresh	N/A	R	51-33624	Open Top	N	12	10			Y	7/13/2022			
Girard Point	6	060A	GP R 3003	8,022	Caustic	N/A	R	51-33624	Dome Roof	N	12	10		Y	Y	10/15/2021			
Girard Point	6	064A	GP R 3101A	5,586	Sodium Hypochlorite	N/A	R	51-33624	Flat Roof	N	8	14.83			Y	8/26/2021			
Girard Point	6	065A	GP R 2500	6,006	Corr Inhib (EC 1024C)	N/A	R	51-33624	Cone Roof	N	10	10.5		Y	Y	8/26/2021			
Girard Point	6	070A	GP R 2501	4,074	Sodium Hypochlorite	N/A	R	51-33624	Dome Roof	N	8.5	10			Y	8/26/2021			
Girard Point	6	075A	GP 75A	2,500	Sodium Hypochlorite	N/A	R	51-33624	UNK	N	UNK	UNK			Y	8/26/2021			
Girard Point	6	076A	GP 76A	2,500	Sodium Hypochlorite	N/A	R	51-33624	UNK	N	UNK	UNK			Y	8/26/2021			
Girard Point	6	077A	GP 77A	2,500	Sodium Hypochlorite	N/A	R	51-33624	UNK	N	UNK	UNK			Y	8/26/2021			
Girard Point	6	078A	GP 78A	2,500	Sodium Hypochlorite	N/A	R	51-33624	UNK	N	UNK	UNK			Y	8/26/2021			
Girard Point	7	005A	GP R 1117	1,016,400	Udex Feed	Short List 1-5	R	51-33624	EFR	N	60	48		Y	Y	11/1/2021	8/10/2022	57973	
Girard Point	7	006A	GP R 791	84,000	Benzene	Benzene	R	51-33624	IFR	N	25	24		Y	Y	2/28/2022	8/25/2022	57973	
Girard Point	7	007A	GP R 798	84,000	Benzene	Benzene	R	51-33624	IFR	N	25	24		Y	Y	2/28/2022	8/10/2022	57973	
Girard Point	7	029A	GP R 494	1,260,000	Main Frac Bottoms	Short List 1-5	R	51-33624	Cone Roof	N	85	30		Y	y	5/5/2022	8/25/2022	57973	
Girard Point	7	030A	GP R 1116	1,016,400	Udex Feed	Short List 1-5	R	51-33624	EFR	Y, Removed	60	48		Y	Y	11/1/2021	8/10/2022	57973	
Girard Point	7	033A	GP R 1088	26,418	Caustic, Fresh	pH	R	51-33624	Dome Roof	N	15	20		Y	Y	7/13/2022			
Girard Point	7	034A	GP R 790	84,000	Benzene	Benzene	R	51-33624	IFR	N	25	24		Y	Y	2/28/2022	8/25/2022	57973	
Girard Point	7	035A	GP R 792	105,000	Cumene	Cumene	R	51-33624	Cone Roof	Y, Removed	25	30		Y	Y	2/28/2022	8/25/2022	57973	
Girard Point	7	036A	GP R 793	105,000	Cumene	Cumene	R	51-33624	Cone Roof	N	25	30		Y	Y	2/28/2022	8/25/2022	57973	
Girard Point	7	037A	GP R 794	84,000	Tetraethylene Glycol	TEG, Short List 1-5	R	51-33624	IFR	Y, Removed	25	24		Y	Y	2/28/2022	8/25/2022	57973	
Girard Point	7	039A	GP R 799	84,000	Benzene	Benzene	R	51-33624	IFR	N	25	24		Y	Y	2/28/2022	8/10/2022	57973	
Girard Point	7	046A	GP U 767	42,000	Recovered Oil	Short List 1-6	R	51-33624	IFR	N	20	21		Y	Y	7/13/2022	8/25/2022	57973	
Girard Point	7	038A	GP R 796	16,800	Glycol	N/A	R	51-33624	Cone Roof	N	14	16		Y	Y	8/26/2021			
Girard Point	7	069A	GP U 1221	2,016	Acid, Sulfuric, Fresh	N/A	R	51-33624	Horiz, Elev	N	6	12		Y	Y	4/27/2023			
Girard Point	7	079A	GP 79A	2,500	Sodium Hypochlorite	N/A	R	51-33624	UNK	N	UNK	UNK			Y	8/26/2021			
Girard Point	7A	019A	GP R 250	3,045,000	Light Cycle Oil	Short List 1-5	R	51-33624	IFR	Y	120	40		Y	Y*	11/1/2021			
Girard Point	7A	020A	GP R 251	3,045,000	Distillate, Untreated	Short List 1-5	R	51-33624	IFR	Y	120	40		Y	Y*	11/1/2021			

Abbreviations:
EFR - External Floating Roof
IFR - Internal Floating Roof
N - No
N/A - Not Applicable
R - Removed
TEG - Tetraethylene Glycol
UNK - Unknown
Y - Yes

Table 2a
Monitoring Well Gauging Summary
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

Dataset	Location ID	Approximate Ground Surface (ft AMSL)	April 11, 2024	
			Depth to Water (ft)	Approximate Groundwater Elevation (ft AMSL)
AST	TG06-MW02	3.81	4.45	-0.64
AST	TG06-MW03	9.29	5.22	4.07
AST	TG06-MW05	8.62	5.11	3.51

Notes:
Vertical Datum is NAVD 1988.
Approximate ground surface elevation is based on the May 9, 2024 grading plan of the Facility provided by Pennoni.

Abbreviations:
AMSL - above mean sea level
AST - aboveground storage tank
ft - feet

Table 2b
Monitoring Well Gauging Summary
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

Dataset	Location ID	Approximate Ground Surface (ft AMSL)	May 14, 2024	
			Depth to Water (ft)	Approximate Groundwater Elevation (ft AMSL)
AST	TG06-MW01	18.87	5.71	13.16
AST	TG06-MW02	3.81	4.97	-1.16
AST	TG06-MW03	9.29	6.13	3.16
AST	TG06-MW04	12.23	5.10	7.13
AST	TG06-MW05	8.62	4.61	4.01

Notes:
Vertical Datum is NAVD 1988.
Approximate ground surface elevation is based on the May 9, 2024 grading plan of the Facility provided by Pennoni.

Abbreviations:
AMSL - above mean sea level
AST - aboveground storage tank
ft - feet

Table 2c
Monitoring Well Gauging Summary
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

Dataset	Location ID	Approximate Ground Surface (ft AMSL)	June 13, 2024	
			Depth to Water (ft)	Approximate Groundwater Elevation (ft AMSL)
AST	TG06-MW01	18.87	4.57	14.30
AST	TG06-MW04	12.23	5.24	6.99

Notes:
Vertical Datum is NAVD 1988.
Approximate ground surface elevation is based on the May 9, 2024 grading plan of the Facility provided by Pennoni.

Abbreviations:
AMSL - above mean sea level
AST - aboveground storage tank
ft - feet

Table 2d
Monitoring Well Gauging Summary
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Dataset	Location ID	TOC (ft AMSL)	January 3, 2023					
			Depth to Product (ft below TOC)	Depth to Water (ft below TOC)	LNAPL Density (g/mL)	Depth to Water (Corrected) (ft below TOC)	Groundwater Elevation (ft AMSL)	Total LNAPL Thickness (ft)
AST	TG07-MW-01	9.24	--	4.09	--	4.09	5.15	--
AST	TG07-MW-02	10.11	--	3.84	--	3.84	6.27	--
AST	TG07-MW-03	9.27	--	3.41	--	3.41	5.86	--
AST	TG07-MW-04	11.84	--	7.06	--	7.06	4.78	--
AST	TG07-MW-05	11.30	--	6.68	--	6.68	4.62	--
AST	TG07-MW-06	12.33	8.07	8.86	0.86	8.18	4.15	0.79
AST	TG07-MW-07	11.24	6.95	7.01	0.82	6.96	4.28	0.06
AST	TG07-MW-08	10.07	--	8.12	--	8.12	1.95	--
Evergreen	B-45	5.10	--	2.54	--	2.54	2.56	--
Evergreen	B-148	7.22	5.96	5.97	0.87	5.96	1.26	0.01
Evergreen	B-150	7.80	2.90	5.55	0.87	3.25	4.55	2.65

Notes:
Depth to water in Evergreen wells were corrected based on historical LNAPL densities associated with other Evergreen wells in the vicinity, as presented in GHD's AOI 6 RIR.
Vertical Datum is NAVD 1988.

Abbreviations:
AMSL - above mean sea level
AST - aboveground storage tank
ft - feet
LNAPL - light non-aqueous phase liquid
TOC - top of casing

Table 2e
Monitoring Well Gauging Summary
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Dataset	Location ID	TOC (ft AMSL)	February 8, 2023					
			Depth to Product (ft below TOC)	Depth to Water (ft below TOC)	LNAPL Density (g/mL)	Depth to Water (Corrected) (ft below TOC)	Groundwater Elevation (ft AMSL)	Total LNAPL Thickness (ft)
AST	TG07-MW-01	9.24	--	4.69	--	4.69	4.55	--
AST	TG07-MW-02	10.11	--	4.05	--	4.05	6.06	--
AST	TG07-MW-03	9.27	--	3.25	--	3.25	6.02	--
AST	TG07-MW-04	11.84	--	7.67	--	7.67	4.17	--
AST	TG07-MW-05	11.30	--	7.33	--	7.33	3.97	--
AST	TG07-MW-06	12.33	8.61	9.87	0.86	8.78	3.55	1.26
AST	TG07-MW-07	11.24	7.62	7.83	0.82	7.66	3.58	0.21
AST	TG07-MW-08	10.07	--	8.51	--	8.51	1.56	--
Evergreen	B-148	7.22	6.38	6.39	0.87	6.38	0.84	0.01
Evergreen	B-150	7.80	3.67	5.60	0.87	3.93	3.87	1.93

Notes:
Depth to water in Evergreen wells were corrected based on historical LNAPL densities associated with other Evergreen wells in the vicinity, as presented in GHD's AOI 6 RIR.
Vertical Datum is NAVD 1988.

Abbreviations:
AMSL - above mean sea level
AST - aboveground storage tank
ft - feet
LNAPL - light non-aqueous phase liquid
TOC - top of casing

Table 3
Soil Screening Summary (Site Assessment, Site Characterization)
Bellwether District Holdings, LLC, Philadelphia, PA

Matrix	Area	Chem Group	Chemical	CASRN	Analyzed	Detected	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Non-Res Direct Contact MSC for Surface Soil (0-2 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Surface Soil	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Subsurface Soil	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC (mg/kg)	Ratio of Max Detect to Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC
Surface Soil	Tank Group 06	WQ	pH	C-006	6	6	7.7	8.5	9.9						
Surface Soil	Tank Group 06	VOC	Benzene	71-43-2	37	17	0.00017	0.059	0.43	280	0.0015			0.50	0.86
Surface Soil	Tank Group 06	VOC	Cumene	98-82-8	34	19	0.00023	0.54	6.9	10000	0.00069			2500	0.0028
Surface Soil	Tank Group 06	VOC	Ethyl Benzene	100-41-4	34	13	0.00018	0.15	1	880	0.0011			70	0.014
Surface Soil	Tank Group 06	VOC	Methyl tert-butyl ether	1634-04-4	34	1	0.00046	0.00046	0.00046	8500	0.000000054			2.0	0.00023
Surface Soil	Tank Group 06	VOC	Toluene	108-88-3	34	10	0.00086	0.22	0.60	10000	0.000060			100	0.0060
Surface Soil	Tank Group 06	VOC	1,2,4-Trimethylbenzene	95-63-6	34	14	0.00049	5.1	30	4700	0.0064			300	0.10
Surface Soil	Tank Group 06	VOC	1,3,5-Trimethylbenzene	108-67-8	34	13	0.00019	3.8	17	4700	0.0036			93	0.18
Surface Soil	Tank Group 06	VOC	Xylenes (total)	1330-20-7	34	13	0.0011	4.2	21	7900	0.0027			1000	0.021
Surface Soil	Tank Group 06	SVOC	Anthracene	120-12-7	34	28	0.052	0.61	4.1	190000	0.000022			350	0.012
Surface Soil	Tank Group 06	SVOC	Benzo(a)anthracene	56-55-3	34	33	0.033	0.91	4.5	130	0.035			340	0.013
Surface Soil	Tank Group 06	SVOC	Benzo(a)pyrene	50-32-8	34	29	0.12	1	4.1	91	0.045			46	0.089
Surface Soil	Tank Group 06	SVOC	Benzo(b)fluoranthene	205-99-2	34	31	0.14	1.1	4.8	76	0.063			170	0.028
Surface Soil	Tank Group 06	SVOC	Benzo(g,h,i)perylene	191-24-2	34	31	0.089	0.55	2.3	190000	0.000012			180	0.013
Surface Soil	Tank Group 06	SVOC	Chrysene	218-01-9	34	34	0.032	0.93	3.7	760	0.0049			230	0.016
Surface Soil	Tank Group 06	SVOC	Fluorene	86-73-7	34	30	0.027	0.73	11	130000	0.000085			3800	0.0029
Surface Soil	Tank Group 06	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	13	13	0.077	0.47	2.8	76	0.037			18000	0.00016
Surface Soil	Tank Group 06	SVOC	Naphthalene	91-20-3	34	32	0.054	6.8	150	66	**2.3**			25	**6.0**
Surface Soil	Tank Group 06	SVOC	Phenanthrene	85-01-8	34	33	0.061	2.1	24	190000	0.00013			10000	0.0024
Surface Soil	Tank Group 06	SVOC	Pyrene	129-00-0	34	33	0.063	1.5	10	96000	0.00010			2200	0.0045
Surface Soil	Tank Group 06	INORG	Lead	7439-92-1	34	34	8.3	220	510	1000	0.51			450	**1.1**
Subsurface Soil	Tank Group 06	WQ	pH	C-006	18	18	7.2	8.9	12						
Subsurface Soil	Tank Group 06	VOC	Benzene	71-43-2	142	49	0.00020	0.84	12			330	0.036	0.50	**24**
Subsurface Soil	Tank Group 06	VOC	Cumene	98-82-8	131	84	0.00015	13	930			10000	0.093	2500	0.37
Subsurface Soil	Tank Group 06	VOC	1,2-Dichloroethane	107-06-2	131	1	0.037	0.037	0.037			98	0.00038	0.50	0.074
Subsurface Soil	Tank Group 06	VOC	Ethyl Benzene	100-41-4	131	54	0.00016	3.7	89			1000	0.089	70	**1.3**
Subsurface Soil	Tank Group 06	VOC	Methyl tert-butyl ether	1634-04-4	131	7	0.00042	0.0024	0.0089			9800	0.00000091	2.0	0.0045
Subsurface Soil	Tank Group 06	VOC	Toluene	108-88-3	131	40	0.00072	1.9	17			10000	0.0017	100	0.17
Subsurface Soil	Tank Group 06	VOC	1,2,4-Trimethylbenzene	95-63-6	131	86	0.00038	26	1800			5400	0.33	300	**6.0**
Subsurface Soil	Tank Group 06	VOC	1,3,5-Trimethylbenzene	108-67-8	131	77	0.00025	13	610			5400	0.11	93	**6.6**
Subsurface Soil	Tank Group 06	VOC	Xylenes (total)	1330-20-7	131	85	0.0013	3.3	95			9100	0.010	1000	0.095
Subsurface Soil	Tank Group 06	SVOC	Anthracene	120-12-7	136	128	0.042	1.1	16			190000	0.000084	350	0.046
Subsurface Soil	Tank Group 06	SVOC	Benzo(a)anthracene	56-55-3	136	132	0.036	2.0	55			190000	0.00029	340	0.16
Subsurface Soil	Tank Group 06	SVOC	Benzo(a)pyrene	50-32-8	136	128	0.061	2.2	59			190000	0.00031	46	**1.3**
Subsurface Soil	Tank Group 06	SVOC	Benzo(b)fluoranthene	205-99-2	136	130	0.065	2.3	56			190000	0.00029	170	0.33
Subsurface Soil	Tank Group 06	SVOC	Benzo(g,h,i)perylene	191-24-2	136	131	0.034	1.3	45			190000	0.00024	180	0.25
Subsurface Soil	Tank Group 06	SVOC	Chrysene	218-01-9	136	132	0.032	2.1	60			190000	0.00032	230	0.26
Subsurface Soil	Tank Group 06	SVOC	Fluorene	86-73-7	136	129	0.029	1.1	18			190000	0.000095	3800	0.0047
Subsurface Soil	Tank Group 06	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	21	19	0.067	0.66	2.6			190000	0.000014	18000	0.00014
Subsurface Soil	Tank Group 06	SVOC	Naphthalene	91-20-3	136	131	0.030	4.6	52			77	0.68	25	**2.1**
Subsurface Soil	Tank Group 06	SVOC	Phenanthrene	85-01-8	136	135	0.031	4.1	150			190000	0.00079	10000	0.015
Subsurface Soil	Tank Group 06	SVOC	Pyrene	129-00-0	136	135	0.054	3.8	160			190000	0.00084	2200	0.073
Subsurface Soil	Tank Group 06	INORG	Lead	7439-92-1	138	138	5.0	300	5100			190000	0.027	450	**11**

Table 3
Soil Screening Summary (Site Assessment, Site Characterization)
Bellwether District Holdings, LLC, Philadelphia, PA

Matrix	Area	Chem Group	Chemical	CASRN	Analyzed	Detected	Min Detected (mg/kg)	Mean Detected (mg/kg)	Max Detected (mg/kg)	Non-Res Direct Contact MSC for Surface Soil (0-2 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Surface Soil	Non-Res Direct Contact MSC for Subsurface Soil (2-15 ft) (mg/kg)	Ratio of Max Detect to Non-Res Direct Contact MSC for Subsurface Soil	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC (mg/kg)	Ratio of Max Detect to Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC
Surface Soil	Tank Group 07	VOC	Benzene	71-43-2	12	12	0.00032	39	440	280	**1.6**			0.50	**880**
Surface Soil	Tank Group 07	VOC	Cumene	98-82-8	12	11	0.0044	24	160	10000	0.016			2500	0.064
Surface Soil	Tank Group 07	VOC	Ethyl Benzene	100-41-4	12	8	0.00019	0.11	0.34	880	0.00039			70	0.0049
Surface Soil	Tank Group 07	VOC	Toluene	108-88-3	12	8	0.00074	0.99	6.8	10000	0.00068			100	0.068
Surface Soil	Tank Group 07	VOC	1,2,4-Trimethylbenzene	95-63-6	12	6	0.00039	0.48	2.6	4700	0.00055			300	0.0087
Surface Soil	Tank Group 07	VOC	1,3,5-Trimethylbenzene	108-67-8	12	4	0.00028	0.12	0.38	4700	0.000081			93	0.0041
Surface Soil	Tank Group 07	VOC	Xylenes (total)	1330-20-7	12	8	0.0012	0.39	1.4	7900	0.00017			1000	0.0014
Surface Soil	Tank Group 07	SVOC	Anthracene	120-12-7	3	2	1.3	4.2	7.1	190000	0.000037			350	0.020
Surface Soil	Tank Group 07	SVOC	Benzo(a)anthracene	56-55-3	3	3	0.029	7.9	20	130	0.15			340	0.059
Surface Soil	Tank Group 07	SVOC	Benzo(a)pyrene	50-32-8	12	9	0.047	2.9	18	91	0.20			46	0.39
Surface Soil	Tank Group 07	SVOC	Benzo(b)fluoranthene	205-99-2	3	3	0.035	4.5	8.4	76	0.11			170	0.049
Surface Soil	Tank Group 07	SVOC	Benzo(g,h,i)perylene	191-24-2	3	2	3.8	5.4	7.0	190000	0.000037			180	0.039
Surface Soil	Tank Group 07	SVOC	Chrysene	218-01-9	3	3	0.030	13	34	760	0.045			230	0.15
Surface Soil	Tank Group 07	SVOC	Fluorene	86-73-7	3	3	0.024	3.2	9.0	130000	0.000069			3800	0.0024
Surface Soil	Tank Group 07	SVOC	Naphthalene	91-20-3	12	9	0.031	0.81	3.9	66	0.059			25	0.16
Surface Soil	Tank Group 07	SVOC	Phenanthrene	85-01-8	3	3	0.062	25	71	190000	0.00037			10000	0.0071
Surface Soil	Tank Group 07	SVOC	Pyrene	129-00-0	3	3	0.041	14	39	96000	0.00041			2200	0.018
Surface Soil	Tank Group 07	INORG	Lead	7439-92-1	3	3	85	120	190	1000	0.19			450	0.42
Subsurface Soil	Tank Group 07	WQ	pH	C-006	8	8	6.1	7.6	8.9						
Subsurface Soil	Tank Group 07	VOC	Benzene	71-43-2	93	77	0.000070	690	12000			330	**36**	0.50	**24000**
Subsurface Soil	Tank Group 07	VOC	Cumene	98-82-8	77	73	0.00028	1900	15000			10000	**1.5**	2500	**6.0**
Subsurface Soil	Tank Group 07	VOC	Ethyl Benzene	100-41-4	63	45	0.00016	15	120			1000	0.12	70	**1.7**
Subsurface Soil	Tank Group 07	VOC	Toluene	108-88-3	63	41	0.00018	590	6200			10000	0.62	100	**62**
Subsurface Soil	Tank Group 07	VOC	1,2,4-Trimethylbenzene	95-63-6	63	50	0.00027	16	330			5400	0.061	300	**1.1**
Subsurface Soil	Tank Group 07	VOC	1,3,5-Trimethylbenzene	108-67-8	63	42	0.00010	8.3	140			5400	0.026	93	**1.5**
Subsurface Soil	Tank Group 07	VOC	Xylenes (total)	1330-20-7	63	50	0.00037	62	560			9100	0.062	1000	0.56
Subsurface Soil	Tank Group 07	SVOC	Anthracene	120-12-7	45	33	0.039	1.5	23			190000	0.00012	350	0.066
Subsurface Soil	Tank Group 07	SVOC	Benzo(a)anthracene	56-55-3	45	39	0.027	3.2	71			190000	0.00037	340	0.21
Subsurface Soil	Tank Group 07	SVOC	Benzo(a)pyrene	50-32-8	63	41	0.049	2.7	54			190000	0.00028	46	**1.2**
Subsurface Soil	Tank Group 07	SVOC	Benzo(b)fluoranthene	205-99-2	45	37	0.034	1.8	28			190000	0.00015	170	0.16
Subsurface Soil	Tank Group 07	SVOC	Benzo(g,h,i)perylene	191-24-2	45	35	0.025	1.2	18			190000	0.000095	180	0.10
Subsurface Soil	Tank Group 07	SVOC	Chrysene	218-01-9	45	40	0.024	6.3	170			190000	0.00089	230	0.74
Subsurface Soil	Tank Group 07	SVOC	Fluorene	86-73-7	45	37	0.030	1.5	11			190000	0.000058	3800	0.0029
Subsurface Soil	Tank Group 07	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	7	3	0.077	0.17	0.35			190000	0.0000018	18000	0.000019
Subsurface Soil	Tank Group 07	SVOC	Naphthalene	91-20-3	63	49	0.048	3.5	52			77	0.68	25	**2.1**
Subsurface Soil	Tank Group 07	SVOC	Phenanthrene	85-01-8	45	39	0.037	7.5	110			190000	0.00058	10000	0.011
Subsurface Soil	Tank Group 07	SVOC	Pyrene	129-00-0	45	41	0.022	5.4	130			190000	0.00068	2200	0.059
Subsurface Soil	Tank Group 07	INORG	Lead	7439-92-1	45	45	3.7	210	1400			190000	0.0072	450	**3.0**

Notes:
Only constituents detected are shown.
The concentrations for the Xylene isomers (m/p and o) were summed before comparing to the criteria for Xylenes (total).
Ratios of concentration to the screening level greater than 1 are shaded in bold.
Chem Group - chemical group; INORG - metals; SVOC - semi-volatile organic compounds; VOC - volatile organic compounds

Table 4

Groundwater Screening Summary (Site Characterization)

Bellwether District Holdings, LLC, Philadelphia, PA

Area	Wellzone	Chem Group	Chemical	CASRN	Meas Basis	Analyzed	Detected	Min Detected (mg/L)	Mean Detected (mg/L)	Max Detected (mg/L)	Non-Res GW Used Aquifer (TDS ≤ 2500) (mg/L)	Ratio of Max Detect to Non-Res GW Used Aquifer (TDS ≤ 2500)
Tank Group 06	Unassigned	VOC	Benzene	71-43-2	T	4	2	0.00087	0.0033	0.0058	0.0050	**1.2**
Tank Group 06	Unassigned	VOC	1,3,5-Trimethylbenzene	108-67-8	T	2	2	0.0035	0.0118	0.020	0.53	0.038
Tank Group 06	Unassigned	SVOC	Benzo(a)pyrene	50-32-8	T	2	1	0.000020	0.000020	0.000020	0.00020	0.10
Tank Group 06	Unassigned	SVOC	Naphthalene	91-20-3	T	2	1	0.0036	0.0036	0.0036	0.10	0.036
Tank Group 06	Unassigned	INORG	Lead	7439-92-1	T	8	6	0.0018	0.026	0.12	0.0050	**24**
Tank Group 07	Unconfined	VOC	Benzene	71-43-2	T	14	10	0.00023	29	240	0.0050	**48000**
Tank Group 07	Unconfined	VOC	Cumene	98-82-8	T	14	13	0.00034	3.0	8.4	3.5	**2.4**
Tank Group 07	Unconfined	VOC	1,2-Dichloroethane	107-06-2	T	14	1	0.13	0.13	0.13	0.0050	**26**
Tank Group 07	Unconfined	VOC	Ethyl Benzene	100-41-4	T	14	7	0.00023	0.057	0.36	0.70	0.51
Tank Group 07	Unconfined	VOC	Methyl tert-butyl ether	1634-04-4	T	14	2	0.00035	0.00036	0.00036	0.020	0.018
Tank Group 07	Unconfined	VOC	Toluene	108-88-3	T	14	11	0.00023	2.5	27	1.0	**27**
Tank Group 07	Unconfined	VOC	1,2,4-Trimethylbenzene	95-63-6	T	14	8	0.00025	0.032	0.22	0.53	0.42
Tank Group 07	Unconfined	VOC	1,3,5-Trimethylbenzene	108-67-8	T	14	3	0.00024	0.00042	0.00072	0.53	0.0014
Tank Group 07	Unconfined	VOC	Xylenes (total)	1330-20-7	T	14	8	0.00122	0.22	1.7	10	0.17
Tank Group 07	Unconfined	SVOC	Anthracene	120-12-7	T	14	14	0.000020	0.00020	0.00043	0.066	0.0065
Tank Group 07	Unconfined	SVOC	Benzo(a)anthracene	56-55-3	T	14	14	0.000030	0.000088	0.00018	0.0039	0.046
Tank Group 07	Unconfined	SVOC	Benzo(a)pyrene	50-32-8	T	14	12	0.000020	0.000048	0.000090	0.00020	0.45
Tank Group 07	Unconfined	SVOC	Benzo(b)fluoranthene	205-99-2	T	14	13	0.000010	0.000042	0.000080	0.0012	0.067
Tank Group 07	Unconfined	SVOC	Benzo(g,h,i)perylene	191-24-2	T	14	7	0.000010	0.000027	0.000060	0.00026	0.23
Tank Group 07	Unconfined	SVOC	Chrysene	218-01-9	T	14	12	0.000020	0.000058	0.00011	0.0019	0.058
Tank Group 07	Unconfined	SVOC	Fluorene	86-73-7	T	14	14	0.000020	0.0021	0.0056	1.9	0.0029
Tank Group 07	Unconfined	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	14	10	0.000010	0.000024	0.000060	0.0023	0.026
Tank Group 07	Unconfined	SVOC	Naphthalene	91-20-3	T	14	11	0.00013	0.018	0.13	0.10	**1.3**
Tank Group 07	Unconfined	SVOC	Phenanthrene	85-01-8	T	14	14	0.000030	0.0018	0.0046	1.1	0.0042
Tank Group 07	Unconfined	SVOC	Pyrene	129-00-0	T	14	14	0.000070	0.00030	0.00086	0.13	0.0066
Tank Group 07	Unconfined	INORG	Lead	7439-92-1	D	14	5	0.00059	0.0021	0.0079	0.0050	**1.6**

Notes:

Only chemicals detected in the area are shown.

Ratios of concentration to the screening level greater than 1 are shaded in bold.

Chem Group - chemical group; INORG - metals; SVOC - semi-volatile organic compounds; VOC - volatile organic compounds

Meas Basis - measured basis; T = total, D = dissolved

Figures

1 Facility Location
2 Site Location
3 Site Layout Map
4 Interpreted Unconfined GW Flow
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7a Site Characterization Soil Sampling Locations
7b Site Characterization Monitoring Well Locations
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8b Subsurface Soil Analytical Results
9a Extent of GW > MSC (Tank Group 06 and 07)
9b Extent of GW > MSC (Facility-Wide)
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10b Soil Analytical Results (AST GP R 273)
10c Soil Analytical Results (AST GP R 276)
10d Soil Analytical Results (AST GP R 281)
10e Soil Analytical Results (AST GP R 282)
10f Soil Analytical Results (AST GP R 284)
10g Soil Analytical Results (AST GP R 285)
10h Soil Analytical Results (AST GP R 1038)
10i Soil Analytical Results (AST GP R 1101)
11a Soil Analytical Results (AST GP R 494)

11b Soil Analytical Results (ASTs GP R 790, GP R 791, GP R 792, GP R 793, and GP R 794)
11c Soil Analytical Results (ASTs GP R 798 and GP R 799)
11d Soil Analytical Results (ASTs GP R 1116 and GP R 1117)
11e Soil Analytical Results (AST GP U 767)
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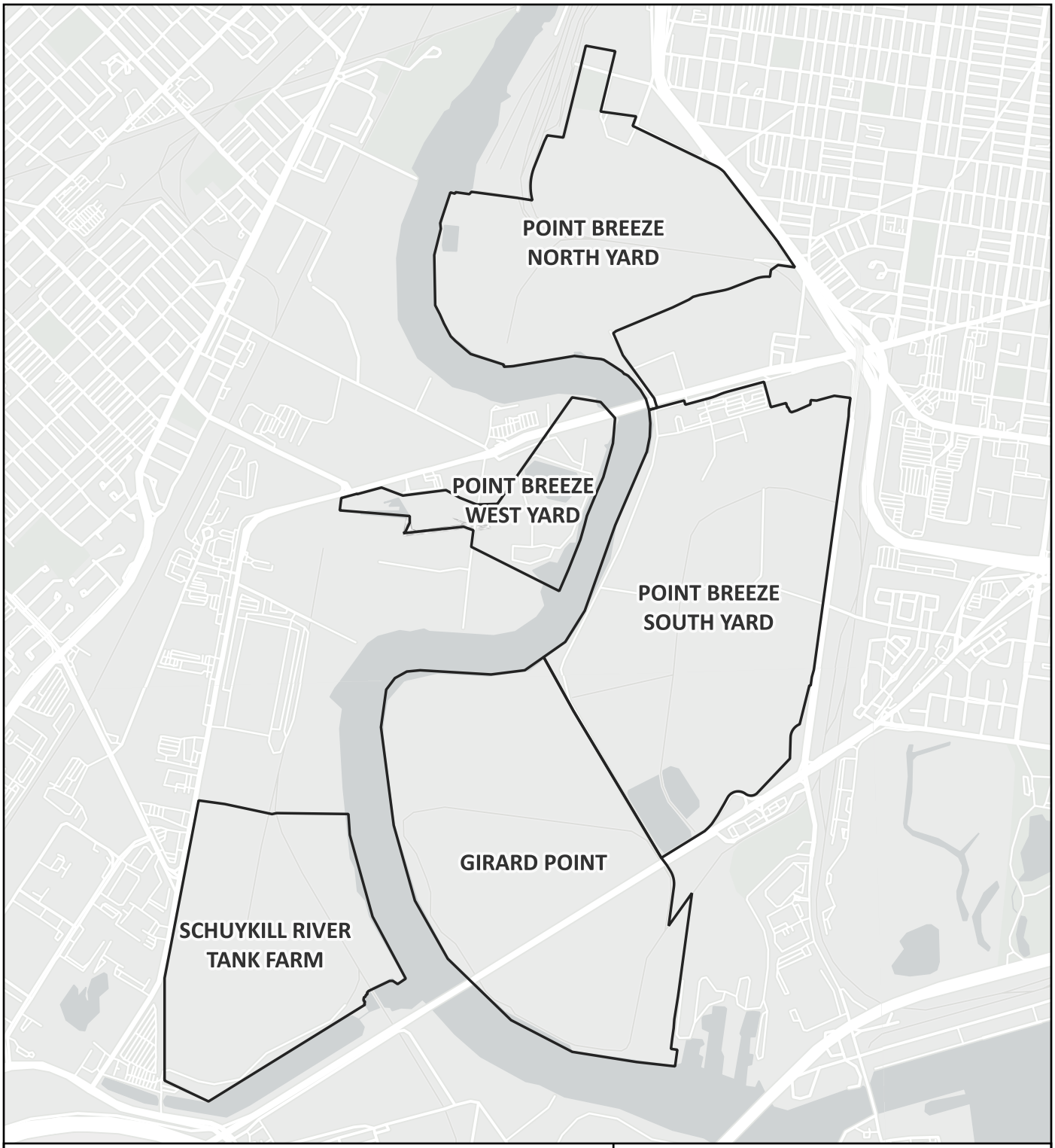
12b General Distribution of Cumene in Soil
12c General Distribution of Ethyl Benzene in Soil
12d General Distribution of Toluene in Soil
12e General Distribution of 1,2,4-Trimethylbenzene in Soil
12f General Distribution of 1,3,5-Trimethylbenzene in Soil
12g General Distribution of Benzo(a)pyrene in Soil
12h General Distribution of Naphthalene in Soil
12i General Distribution of Lead in Soil
13 Site Characterization GW Analytical Results



0 2,000 4,000 Feet

1 Inch = 2000 Feet

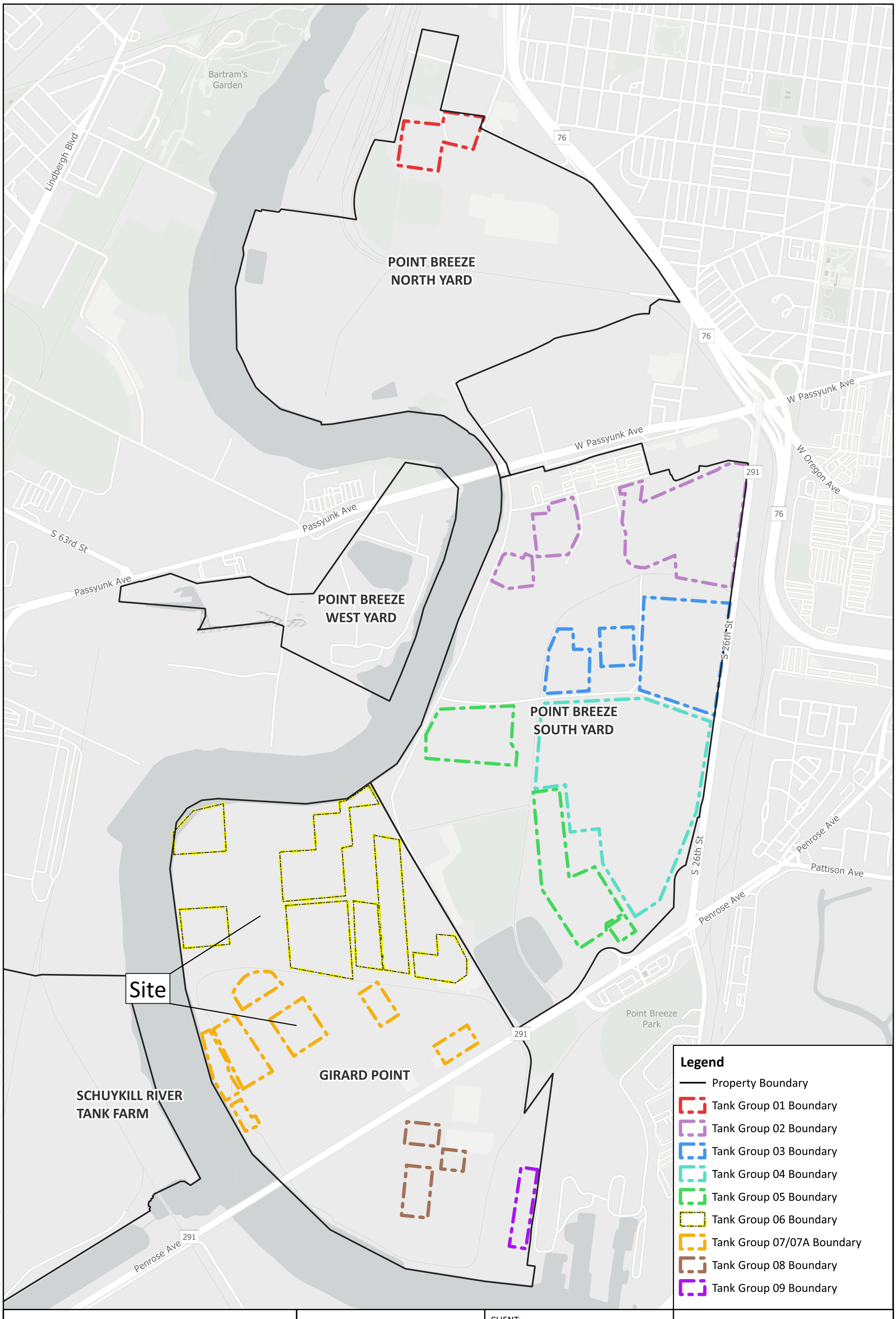
N

Legend

Property Boundary

SAFETY FIRST	CLIENT: Bellwether District Holdings, LLC	**Facility Location**
terraphase engineering	PROJECT: Aboveground Storage Tank Closure	
	PROJECT NUMBER: P044.001.002	**FIGURE 1**

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG06\(20250205)QGZ328_P044.001_BDH_AST_TG06_TG07_SCR.qgz Layout: Figure 1 - Facility Location QGIS version: 3.40 Created By: M.Civitillo Checked By: K. Long



SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location

FIGURE 2

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG06\(20250205)QGZ328_P044.001_BDH_AST_TG06_TG07_SCR.qgz Layout: Figure 2 - Site Location QGIS version: 3.40 Created By: M.Civitillo Checked By: K. Long

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GP R 1101
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GP R 284
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GP 1123
GP 1118
GP R 280
GP R 282
GP R 973
GP 1119
GP 279
GP R 281
AOI 7
GP 77A
GP R 272
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AOI 3
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PB 820
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PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
AOI 4
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253
Tank Group 07A

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen Area of Interest
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping

0 100 200 300 400 ft

1 Inch = 200 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Layout

FIGURE 3

N:\GIS\Proj\P044.001_PEDRAS\FIS\GIS\FS_GIS\2 and GPM\Drawings_AST\TGMXD\20250313\20250313_P044.001_ADH_AST_TGMX_TGO7_RB.aprx Figure 3 - Site Layout 2025-03-13T15:56:11.000 Created By: MJ Cuviello Checked By: K. Liang

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GP R 1038
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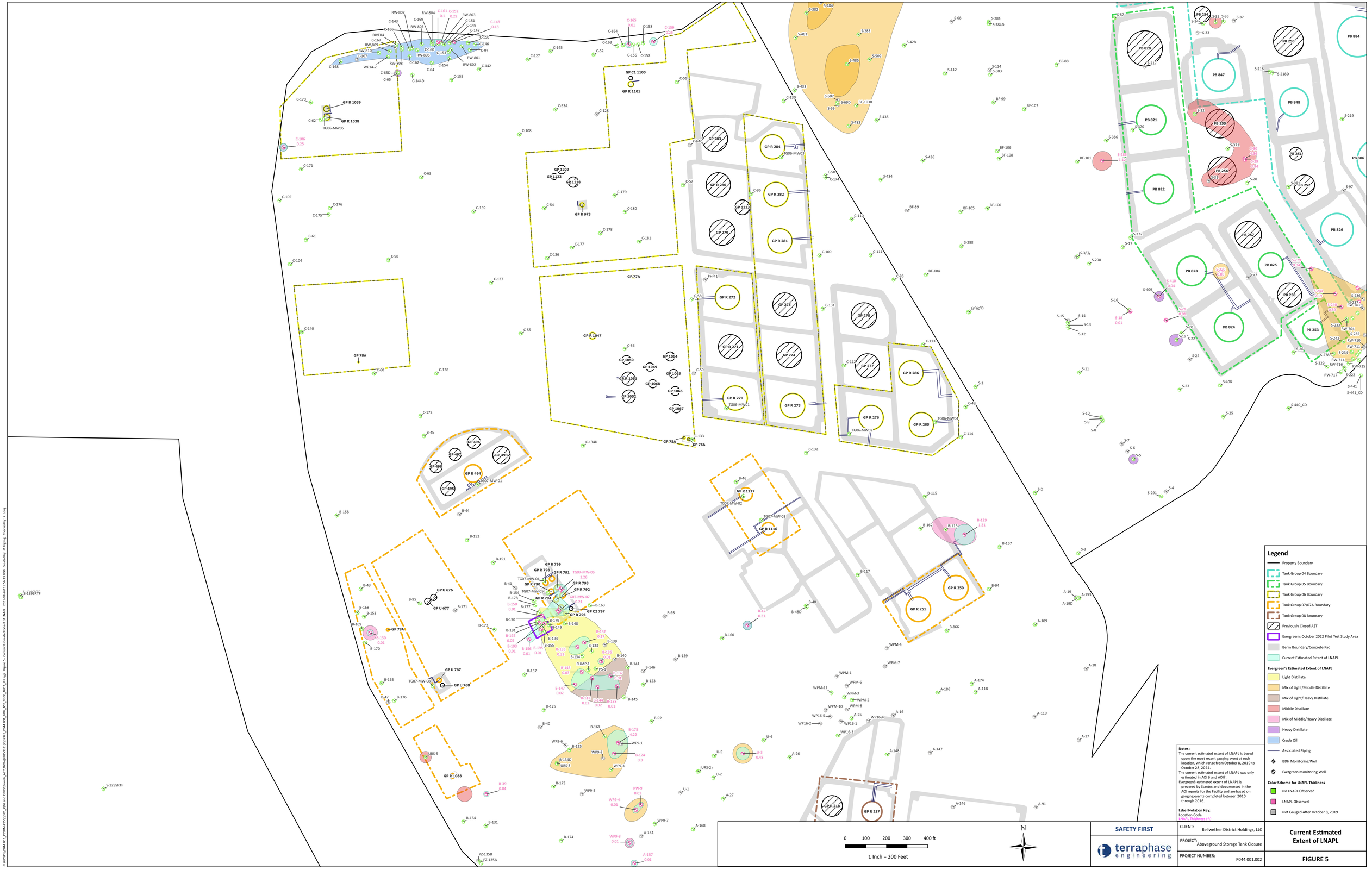
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C-165 0.01
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C-106 0.25
C-130 0.32
S-484
S-382
S-481
S-283
S-485
S-509
S-433
S-507
S-69D
S-69
BF-103R
S-483
S-435
S-428
S-68
S-284
S-284D
S-412
S-114
S-383
BF-88
BF-99
BF-107
S-57
S-36
S-37
S-35
S-34
S-33
S-218
S-218D
S-32
S-219
S-371
S-31
S-28
S-97
S-386
BF-101
S-372
S-17
S-387
S-290
S-288
BF-104
BF-105
BF-100
BF-89
S-434
S-436
BF-106
BF-108
S-409
S-16
S-15
S-14
S-13
S-12
S-20
S-19
S-22
S-24
S-23
S-408
S-11
S-10
S-9
S-8
S-7
S-6
S-5
S-25
S-440_CD
S-441
S-441_CD
S-222
RW-717
RW-715
S-329
S-278
S-234
RW-714
RW-716
S-242
RW-710
RW-711
S-235
RW-704
S-233
S-237
RW-703
S-236
S-26
S-27
S-1
C-40
C-113
C-112
C-131
C-111
C-109
C-95
BF-90D
C-174
C-60
C-110
C-114
C-132
C-133
C-134D
C-59
C-58
C-55
C-56
C-54
C-57
C-96
C-179
C-180
C-178
C-181
C-177
C-136
C-108
C-53A
C-128
C-51
C-127
C-145
C-52
C-163
C-164
C-158
C-156
C-157
C-146
C-97
C-150
C-149
C-147
C-151
C-169
C-143
C-166
C-167
C-107
C-168
C-65D
C-65
C-64
C-154
C-153
C-160
C-162
C-144D
C-155
C-142
C-170
C-62
C-171
C-63
C-105
C-176
C-175
C-139
C-61
C-104
C-98
C-137
C-140
C-138
C-172
C-60
B-45
B-46
B-44
B-158
B-152
B-151
B-43
B-95
B-171
B-172
B-168
B-153
B-169
B-130 0.01
B-170
B-165
B-42
B-176
B-157
B-93
B-159
B-92
B-40
B-126
B-123
B-146
B-141
B-140
B-145
B-139
B-133
B-134
B-136 0.01
B-143 0.03
B-147 0.02
B-142 0.01
B-144 0.02
B-138 0.01
B-137 0.01
B-132 0.17
B-135 0.32
B-156 0.01
B-150 0.01
B-189 0.01
B-192 0.05
B-191
B-190
B-179
B-149
B-148
B-194
B-155
B-177
B-178
B-154
B-41
B-163
B-161
B-175 4.22
B-124 0.3
WP9-1
WP9-2
WP9-3
WP9-4 0.01
WP9-5
WP9-6
WP9-7
WP9-8 0.01
B-125
B-134D
URS-3
URS-5
B-39 0.04
B-173
B-174
B-164
B-131
RW-9 0.01
A-154
A-157 0.01
A-168
U-1
U-2
U-3 0.48
U-4
U-5
URS-2
A-26
A-27
B-116
B-129 1.31
B-162
B-115
B-167
B-117
B-94
B-48
B-48D
B-47 0.31
B-160
B-166
WPM-1
WPM-6
WPM-11
WPM-3
WPM-2
WPM-10
WPM-8
WPM-4
WPM-7
WP16-5
WP16-2
WP16-1
WP16-3
WP16-4
A-25
A-16
A-148
A-147
A-146
A-91
A-189
A-174
A-186
A-118
A-119
A-17
A-18
A-153
A-19
A-19D
S-2
S-4
S-291
S-3
S-1295RTF
S-1395RTF
P2-135B
P2-135A
TG07-MW-01
TG06-MW01
TG06-MW04
TG06-MW05
TG07-MW-08
WP14-2
PS-1
SUMP-1
RW-802
RW-803
RW-804
RW-805
RW-806
RW-807
RW-808
RW-809
RW-810
RW-801
RW-704
RW-710
RW-711
RW-714
RW-715
RW-716
RW-717
RW-703
S-240 0.59
S-241 0.19
S-410 0.04
S-227 0.05
S-21 0.01
S-18 0.01
S-17 0.09
C-65
C-144D
C-64
C-65D
C-62
C-106
C-130

GP R 1039
GP R 1038
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP CI 1100
GP R 1101
GP 283
GP R 284
GP 280
GP 282
GP 1113
GP R 281
GP 279
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 270
GP R 273
GP R 276
GP R 285
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 1117
GP R 1116
GP R 250
GP R 251
GP 217
GP R 218
GP 798
GP 799
GP R 791
GP 790
GP R 793
GP R 792
GP R 794
GP CI 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
PB 254
PB 820
PB 847
PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 252
PB 822
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Site Assessment Soil Sample Location

0 100 200 300 400 ft

1 Inch = 200 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Assessment Soil Sampling Locations

FIGURE 6

N:\GIS\P\P044.001_PGMA#45\005_GIS and GPM\05\Branch_AST\TS05\20250313\20250313_P044.001_BDH_AST_TS05_TGO7_BR.mxd - Figure 6 - Site Assessment Soil Sampling Locations - 2025-03-26T15:56:13.000 - Created by: M.Civitillo - Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 799
GP R 798
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP 283
GP R 284
GP 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 272
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 252
PB 822
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Site Characterization Soil Sample Location

0 100 200 300 400 ft

1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Characterization Soil Sampling Location

FIGURE 7a

N:\GIS\P\P044.001_PEBM-HIST\GIS_QAE and GPWD\Branch_AST\Y2006\U20250313\20250319_P044.001_BDH_AST_Y2QX_Y2017_#R.mxd - Figure 7a - Site Characterization Soil Sampling Locations - 2021-03-24T15:56:13.000 - Created by: JM.Cirellito - Checked by: K. Long

GP R 1039
GP R 1038
TG06-MW-05
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 283
GP R 284
TG06-MW-03
GP R 280
GP R 282
GP 1119
GP 279
GP R 281
GP 77A
GP R 272
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 1047
GP 1050
GP 1064
GP 1069
GP R 1051
GP 1065
GP 1058
GP 1066
GP 1052
GP 1067
GP R 270
GP R 273
GP R 276
GP R 285
TG06-MW-04
TG06-MW-01
TG06-MW-02
GP 75A
GP 76A
GP 78A
PB 254
PB 820
PB 250
PB 884
PB 847
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 492
TG07-MW-03
GP R 1117
TG07-MW-02
TG07-MW-01
GP R 1116
GP R 250
GP R 251
TG07-MW-06
TG07-MW-04
GP R 798
GP R 799
GP R 791
GP R 790
TG07-MW-05
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
TG07MW-08
GP U 768
TG07-MW-07
GP R 1088
GP R 218
GP R 217

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Site Characterization Monitoring Well Location

0 100 200 300 400 ft

1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure

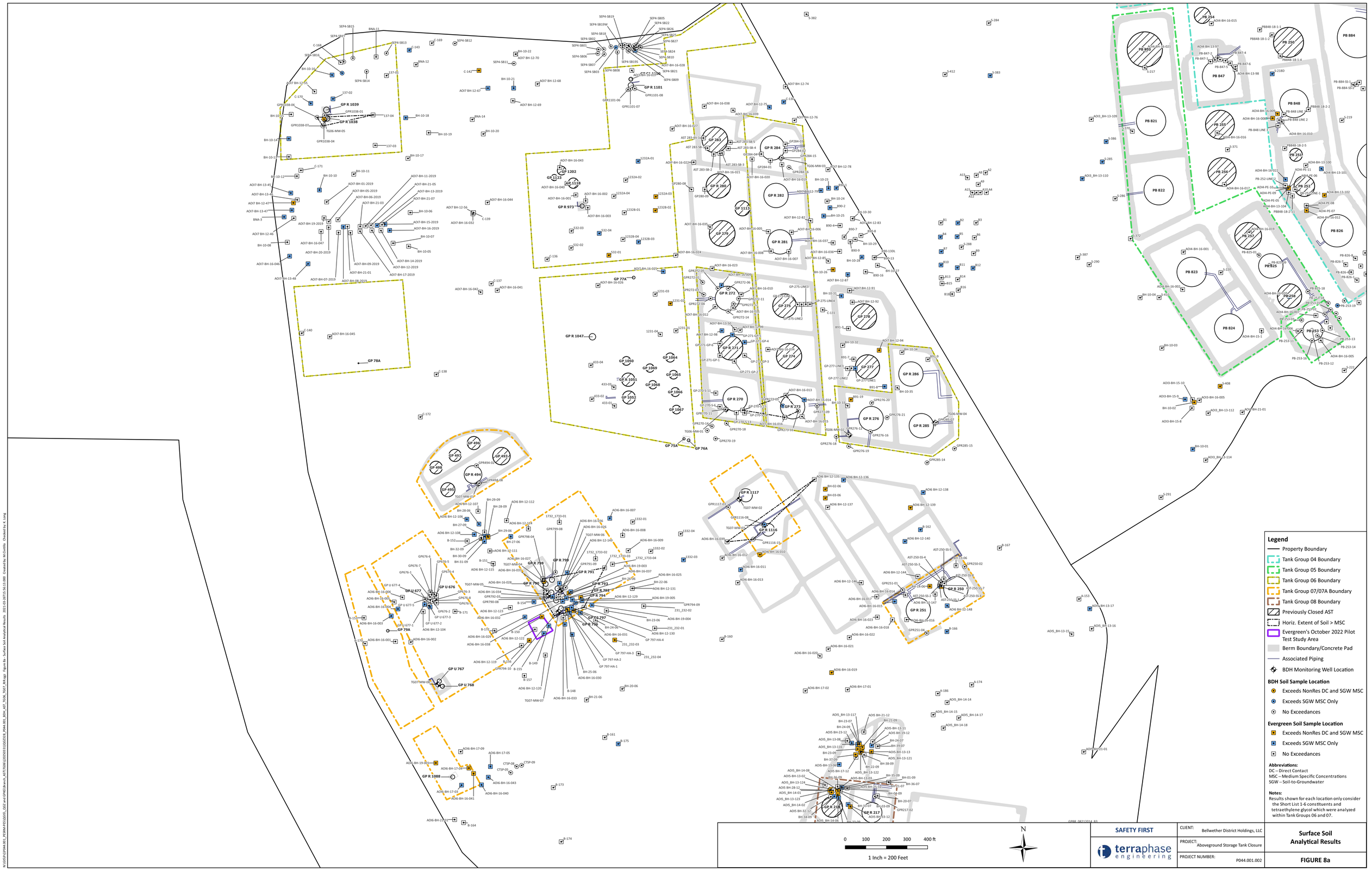
PROJECT NUMBER: P044.001.002

Site Characterization Monitoring Well Locations

FIGURE 7b

N:\GIS\P\P044.001_PEBM-HIS\MXDS_GW2 and GPWD\Branch_AST\TG06\20250313\20250319_P044.001_BDH_AST_TG06_TG07_RR.mxd Figure 7b - Site Characterization Monitoring Well Locations 2025-03-20T15:56:13.000 Created by: M.J.Cwiklo Checked by: K.Long

N:\GIS\P\P044.001_PERM\MXD\SOIL_QAE.mxd (Branch_AST\TG06\20250313\20250318_P044.001_BSH_AST_TG06_TG07_RR.ggp - Figure 8a - Surface Soil Analytical Results - 2025-03-18T15:56:13.000 Created by: M.Civitillo - Checked by: K.Long



see Inset Map 1

0 100 200 300 ft

Inset Map 1

see Inset Map 2

0 50 100 150 ft

Inset Map 2

see Inset Map 3

0 50 100 150 ft

Inset Map 3

0 100 200 300 400 ft

1 Inch = 200 Feet

N

Notes:

Results shown for each location only consider the Short List 1-6 constituents and tetraethylene glycol which were analyzed within Tank Groups 06 and 07.

Only lead was detected at concentrations above the SGW MSCs in the vicinity of tank GP R 1038. Since the tank's primary contents was alkyl slurry, which would not be expected to have contained lead, it is not expected that lead would be present due to a release from this tank. As a result, these exceedances are excluded from the extent of soil greater than the MSCs.

Only benzene was detected at concentrations above the SGW MSCs at GPR270-14 and GPR270-19. Since these borings are located outside of GP R 270's berm boundary and no borings within the berm identified elevated benzene concentrations, it is likely these benzene exceedances are not tank-related and therefore are excluded from the extent of soil greater than the MSCs.

Only lead was detected at concentrations above the SGW MSCs in the vicinity of tank GP R 1117. The exceedances are delineated to north by location GPR270-14, which only identified levels benzene greater than the SGW MSCs, not lead.

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Horiz. Extent of Soil > MSC
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well Location

BDH Soil Sample Location

- Exceeds NonRes DC and SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Evergreen Soil Sample Location

- Exceeds NonRes DC and SGW MSC
- Exceeds SGW MSC Only
- No Exceedances

Abbreviations:

DC – Direct Contact
MSC – Medium Specific Concentrations
SGW – Soil-to-Groundwater

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PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Subsurface Soil Analytical Results

FIGURE 8b

N:\GIS\P\P044\001_PEDA\MXD\SDS_Q02.aprx\SDS_Q02.aprx\Batch_AST\1006\20250313\20250318_P044_001_BSH_AST_1006_T07_AR.mxd - Figure 8b - Subsurface Soil Analytical Results - 2021-03-28T15:56:13.000 - Created by: M.Cinelli - Checked by: K. Long

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Remediation System
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Overall Horiz. Extent of Site-Related GW > MSC
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

Groundwater Sample Results

- Exceeds Non-Res Groundwater Used Aquifer (TDS ≤ 2500) MSC
- No Exceedances

Notes:
Exceedances identified only reflect sampling results for AST Short List 1-6 analytes.
Yellow highlighted BDH wells sampled only for LNAPL are assumed to have groundwater contamination.
Results shown for each well are the maximum concentrations from the two most recent groundwater sampling events from September 8, 2012 to May 31, 2024.

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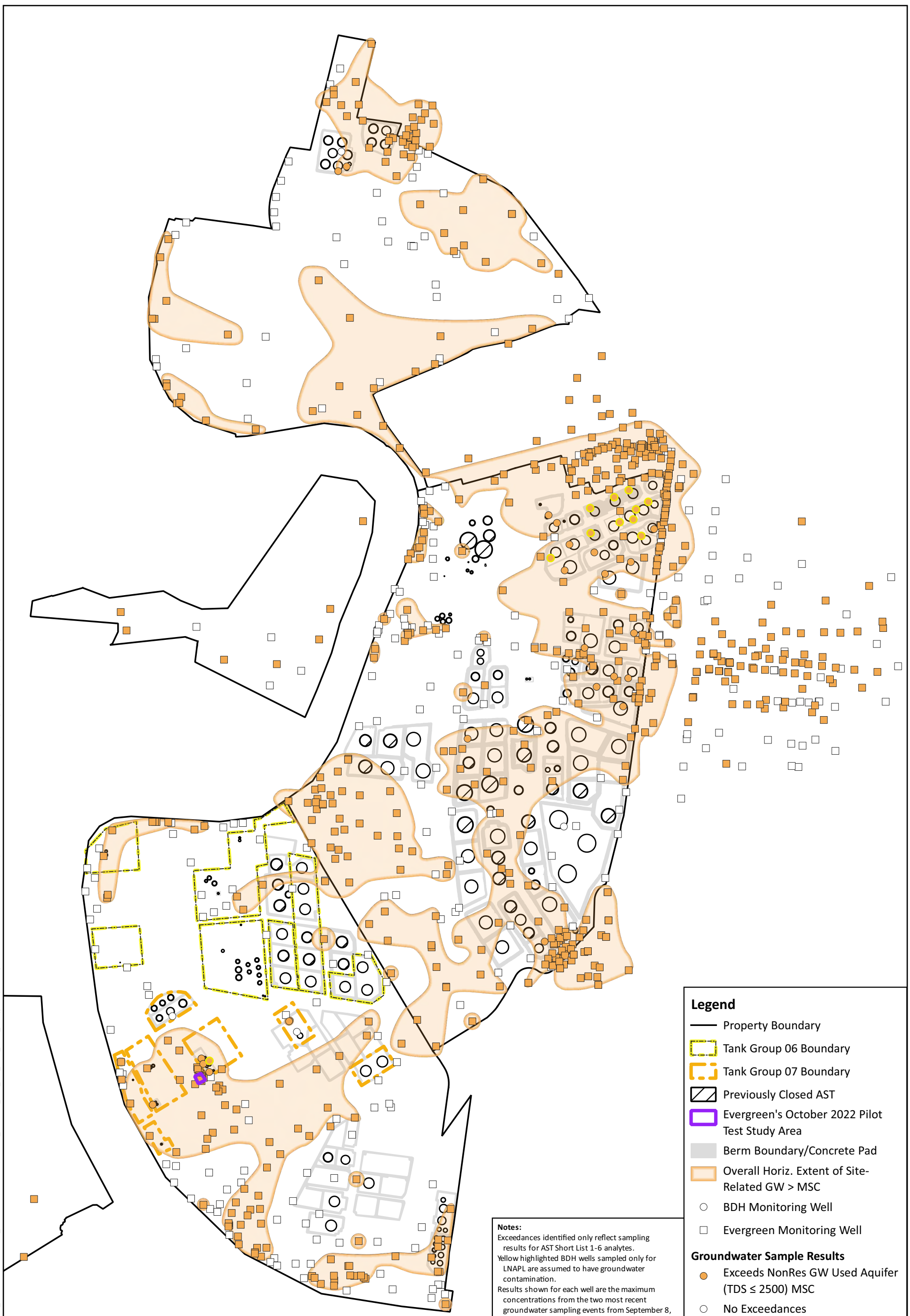
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Extent of GW > MSC (Tank Group 06 and 07)

FIGURE 9a

N:\GIS\P\P044.001_PEBM-HIS\MXDs\FS_Qtr2 and Qtr4\Branch_AST\TG06\20250331\20250328_P044.001_BDH_AST_TG06_TG07_RR.mxd - Figure 9a - Extent of GW > MSCs (TG) 2025-03-28T15:56:13.000 Created By: MJ Cuvillo Checked By: K Long


Legend
Property Boundary
Tank Group 06 Boundary
Tank Group 07 Boundary
Previously Closed AST
Evergreen's October 2022 Pilot Test Study Area
Berm Boundary/Concrete Pad
Overall Horiz. Extent of Site-Related GW > MSC
BDH Monitoring Well
Evergreen Monitoring Well
Groundwater Sample Results
Exceeds NonRes GW Used Aquifer (TDS ≤ 2500) MSC
No Exceedances
Notes:
Exceedances identified only reflect sampling results for AST Short List 1-6 analytes.
Yellow highlighted BDH wells sampled only for LNAPL are assumed to have groundwater contamination.
Results shown for each well are the maximum concentrations from the two most recent groundwater sampling events from September 8, 2012 to May 31, 2024.
N
0 500 1,000 1,500 ft
1 Inch = 1000 Feet
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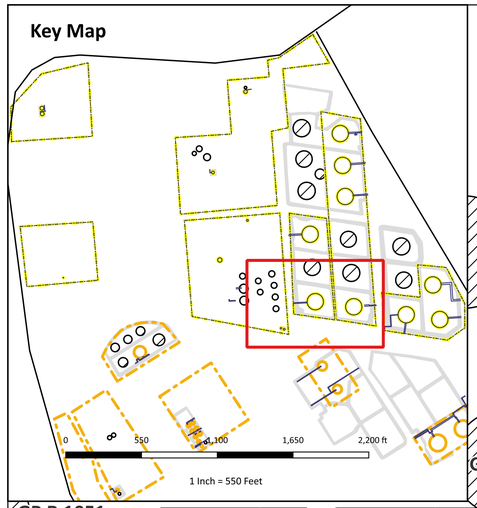
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002
Extent of GW > MSC (Facility-Wide)
FIGURE 9b
N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Branch_AST\TG06\(20250331)QGZ328_P044.001_BDH_AST_TG06_TG07_RIR.qgz Layout: Figure 9b - Extent of GW > MSC (Facility-Wide) QGIS version: 3.40 Created By: M.Ingling Checked By: K. Long

Key Map



GP-270-S-10	2-2.5(ft)
VOCs	
Benzene	0.051 U
1,2-Dichloroethane	--
Ethyl Benzene	0.12 J
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.1 U
1,3,5-Trimethylbenzene	0.1 U
SVOCs	
Benzo(a)pyrene	3.6
Naphthalene	0.87
Metals	
Lead	447

GP-270-S-11	1.5-2(ft)
VOCs	
Benzene	0.12 J
1,2-Dichloroethane	--
Ethyl Benzene	0.064 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.064 U
1,3,5-Trimethylbenzene	0.064 U
SVOCs	
Benzo(a)pyrene	1.6 J
Naphthalene	0.29 J
Metals	
Lead	99.9

GPR270-09	3.5-4(ft)
VOCs	
Benzene	0.00073 U
1,2-Dichloroethane	0.0015 U
Ethyl Benzene	0.00026 J
Methyl tert-butyl ether	0.0014 J
1,2,4-Trimethylbenzene	0.001 J
1,3,5-Trimethylbenzene	0.00032 J
SVOCs	
Benzo(a)pyrene	3.2
Naphthalene	7.7
Metals	
Lead	400

GPR270-15	3-3.5(ft)
VOCs	
Benzene	0.00073 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0029 U
1,2,4-Trimethylbenzene	0.0029 U
1,3,5-Trimethylbenzene	0.0029 U
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	12
Metals	
Lead	394

GP-270-S-6	1.5-2(ft)
VOCs	
Benzene	0.053 U
1,2-Dichloroethane	--
Ethyl Benzene	0.11 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.11 U
1,3,5-Trimethylbenzene	0.11 U
SVOCs	
Benzo(a)pyrene	7.1
Naphthalene	0.41 J
Metals	
Lead	450

GPR270-03	3.5-4(ft)
VOCs	
Benzene	0.061
1,2-Dichloroethane	0.11 U
Ethyl Benzene	0.075 J
Methyl tert-butyl ether	0.23 U
1,2,4-Trimethylbenzene	0.12 J
1,3,5-Trimethylbenzene	0.034 J
SVOCs	
Benzo(a)pyrene	2.9
Naphthalene	10
Metals	
Lead	450

GP-270-S-1	4-4.5(ft)
VOCs	
Benzene	0.029 U
1,2-Dichloroethane	--
Ethyl Benzene	0.059 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.059 U
1,3,5-Trimethylbenzene	0.059 U
SVOCs	
Benzo(a)pyrene	1.7
Naphthalene	0.18 J
Metals	
Lead	73.1

GPR270-01	4.5-5(ft)
VOCs	
Benzene	0.036 J
1,2-Dichloroethane	0.11 U
Ethyl Benzene	0.051 J
Methyl tert-butyl ether	0.22 U
1,2,4-Trimethylbenzene	0.087 J
1,3,5-Trimethylbenzene	0.22 U
SVOCs	
Benzo(a)pyrene	3.1
Naphthalene	15
Metals	
Lead	341

GP-270-S-5	4-4.5(ft)
VOCs	
Benzene	0.031 U
1,2-Dichloroethane	--
Ethyl Benzene	0.061 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.061 U
1,3,5-Trimethylbenzene	0.061 U
SVOCs	
Benzo(a)pyrene	0.26
Naphthalene	0.13 J
Metals	
Lead	28.9

GP-270-S-2	4-4.5(ft)
VOCs	
Benzene	0.025 U
1,2-Dichloroethane	--
Ethyl Benzene	0.051 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.051 U
1,3,5-Trimethylbenzene	0.051 U
SVOCs	
Benzo(a)pyrene	0.36
Naphthalene	0.051 U
Metals	
Lead	47.1

GP-270-S-9	2.5-3(ft)
VOCs	
Benzene	0.057 U
1,2-Dichloroethane	--
Ethyl Benzene	0.11 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.12 J
1,3,5-Trimethylbenzene	0.11 U
SVOCs	
Benzo(a)pyrene	2.9
Naphthalene	0.66
Metals	
Lead	328

GP-270-S-4	4-4.5(ft)
VOCs	
Benzene	0.035 U
1,2-Dichloroethane	--
Ethyl Benzene	0.07 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.07 U
1,3,5-Trimethylbenzene	0.07 U
SVOCs	
Benzo(a)pyrene	0.59
Naphthalene	0.07 U
Metals	
Lead	20.7

GP-270-S-3	3-3.5(ft)
VOCs	
Benzene	0.041 U
1,2-Dichloroethane	--
Ethyl Benzene	0.082 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.082 U
1,3,5-Trimethylbenzene	0.082 U
SVOCs	
Benzo(a)pyrene	5.1
Naphthalene	0.41 J
Metals	
Lead	264

GPR270-11	1.5-2(ft)	4.5-5(ft)	6.5-7(ft)	7-7.5(ft)
VOCs				
Benzene	0.31 U	0.00087 U	0.067	0.12
1,2-Dichloroethane	0.62 U	0.0017 U	0.064 U	0.091 U
Ethyl Benzene	0.16 J	0.0006 J	0.23	1.9
Methyl tert-butyl ether	1.2 U	0.0035 U	0.13 U	0.18 U
1,2,4-Trimethylbenzene	5.5	0.00098 J	3	20
1,3,5-Trimethylbenzene	2.6	0.00049 J	0.9	3.6
SVOCs				
Benzo(a)pyrene	0.14 J	2.8	0.09 J	0.52
Naphthalene	4.2	20	1.5	0.28
Metals				
Lead	42.7	**589 (C)**	65	73.1

GPR270-08	4.5-5(ft)
VOCs	
Benzene	0.00059 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0024 U
1,2,4-Trimethylbenzene	0.0024 U
1,3,5-Trimethylbenzene	0.0024 U
SVOCs	
Benzo(a)pyrene	0.18 U
Naphthalene	0.23 U
Metals	
Lead	14.9

GP-270-S-7	2.5-3(ft)
VOCs	
Benzene	0.044 U
1,2-Dichloroethane	--
Ethyl Benzene	0.088 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.088 U
1,3,5-Trimethylbenzene	0.088 U
SVOCs	
Benzo(a)pyrene	3.5
Naphthalene	0.39 J
Metals	
Lead	387

GPR270-14	0.5-1(ft)	2-2.5(ft)	3.5-4(ft)
VOCs			
Benzene	0.00048 U	**0.53 (C)**	0.0008 U
1,2-Dichloroethane	0.00097 U	0.09 U	0.0016 U
Ethyl Benzene	0.00097 U	0.12	0.0016 U
Methyl tert-butyl ether	0.0019 U	0.18 U	0.0032 U
1,2,4-Trimethylbenzene	0.0019 U	0.12 J	0.0013 J
1,3,5-Trimethylbenzene	0.0019 U	0.036 J	0.00041 J
SVOCs			
Benzo(a)pyrene	0.13 J	1.8	2.5
Naphthalene	0.53	11	13
Metals			
Lead	182	422	385

GPR270-17	1.5-2(ft)	2-2.5(ft)	5.5-6(ft)
VOCs			
Benzene	0.00031 J	0.00032 J	0.00058 U
1,2-Dichloroethane	--	--	--
Ethyl Benzene	--	--	--
Methyl tert-butyl ether	--	--	--
1,2,4-Trimethylbenzene	--	--	--
1,3,5-Trimethylbenzene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	--	--	--

GPR270-19	1-1.5(ft)	2-2.5(ft)	6.5-7(ft)
VOCs			
Benzene	0.43	**0.69 (C)**	0.00064 U
1,2-Dichloroethane	--	--	--
Ethyl Benzene	--	--	--
Methyl tert-butyl ether	--	--	--
1,2,4-Trimethylbenzene	--	--	--
1,3,5-Trimethylbenzene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	--	--	--

GP-270-S-8	2-2.5(ft)
VOCs	
Benzene	0.044 U
1,2-Dichloroethane	--
Ethyl Benzene	0.088 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.088 U
1,3,5-Trimethylbenzene	0.088 U
SVOCs	
Benzo(a)pyrene	2.2 J
Naphthalene	0.71
Metals	
Lead	443

GPR270-18	0.5-1(ft)	2-2.5(ft)	6.5-7(ft)
VOCs			
Benzene	0.029	0.00049 U	0.00088 U
1,2-Dichloroethane	--	--	--
Ethyl Benzene	--	--	--
Methyl tert-butyl ether	--	--	--
1,2,4-Trimethylbenzene	--	--	--
1,3,5-Trimethylbenzene	--	--	--
SVOCs			
Benzo(a)pyrene	--	--	--
Naphthalene	--	--	--
Metals			
Lead	--	--	--

GP-270-S-12	2-2.5(ft)
VOCs	
Benzene	0.061 J
1,2-Dichloroethane	--
Ethyl Benzene	0.097 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.12 J
1,3,5-Trimethylbenzene	0.097 U
SVOCs	
Benzo(a)pyrene	1 J
Naphthalene	0.85
Metals	
Lead	235

GPR270-16	3.5-4(ft)
VOCs	
Benzene	0.00066 U
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.0013 U
Methyl tert-butyl ether	0.0026 U
1,2,4-Trimethylbenzene	0.0026 U
1,3,5-Trimethylbenzene	0.0026 U
SVOCs	
Benzo(a)pyrene	1.8
Naphthalene	14
Metals	
Lead	235

GP-270-S-13	1-1.5(ft)
VOCs	
Benzene	0.058 U
1,2-Dichloroethane	--
Ethyl Benzene	0.12 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.12 U
1,3,5-Trimethylbenzene	0.12 U
SVOCs	
Benzo(a)pyrene	2.4 J
Naphthalene	0.67
Metals	
Lead	330

GPR270-07	4-4.5(ft)
VOCs	
Benzene	0.064 J
1,2-Dichloroethane	0.13 U
Ethyl Benzene	0.075 J
Methyl tert-butyl ether	0.26 U
1,2,4-Trimethylbenzene	0.13 J
1,3,5-Trimethylbenzene	0.035 J
SVOCs	
Benzo(a)pyrene	2.8
Naphthalene	9.1
Metals	
Lead	**537 (C)**

GPR270-13	4.5-5(ft)
VOCs	
Benzene	0.00069 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0028 U
1,2,4-Trimethylbenzene	0.0028 U
1,3,5-Trimethylbenzene	0.0028 U
SVOCs	
Benzo(a)pyrene	0.32
Naphthalene	0.03 J
Metals	
Lead	215

GP-270-S-15	1.5-2(ft)
VOCs	
Benzene	0.11 J
1,2-Dichloroethane	--
Ethyl Benzene	0.19 J
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.16 J
1,3,5-Trimethylbenzene	0.11 U
SVOCs	
Benzo(a)pyrene	6.5
Naphthalene	0.43 J
Metals	
Lead	386

GP-270-S-14	1-1.5(ft)
VOCs	
Benzene	0.057 U
1,2-Dichloroethane	--
Ethyl Benzene	0.11 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	0.13 J
1,3,5-Trimethylbenzene	0.11 U
SVOCs	
Benzo(a)pyrene	2.5 J
Naphthalene	0.8
Metals	
Lead	366

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

GP R 1051
GP 1064
GP 1065
GP 1066
GP 1052
GP 75A
GP 76A
GP R 271
GP 274
GP R 270 (Recovered Oil)
GP R 273 (Vacuum Gas Oil)
C-59
C-133
TG06-MW-01
GP-271-GP-1
GP-271-GP-2
GP-271-GP-3
GP-271-GP-4
GP-271-GP-6
AOI7-BH-16-034
GPR270-01
GPR270-03
GPR270-07
GPR270-08
GPR270-09
GPR270-11
GPR270-13
GPR270-14
GPR270-15
GPR270-16
GPR270-17
GPR270-18
GPR270-19
GP-270-S-1
GP-270-S-2
GP-270-S-3
GP-270-S-4
GP-270-S-5
GP-270-S-6
GP-270-S-7
GP-270-S-8
GP-270-S-9
GP-270-S-10
GP-270-S-11
GP-270-S-12
GP-270-S-13
GP-270-S-14
GP-270-S-15
GPR273-01
GPR273-02
GPR273-03
GPR273-04
GPR273-05
GPR273-07
GPR273-08
GPR273-09
GPR273-11
GPR273-12
GPR273-13
GPR273-14
AOI7-BH-16-013
AOI7-BH-16-014
AOI7-BH-16-015
AOI7-BH-16-016

Legend

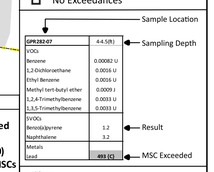
- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances



Qualifiers:
U -- Not Detected
J -- Estimated Concentration
-- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium-Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 30 60 90 120 ft
1 Inch = 30 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

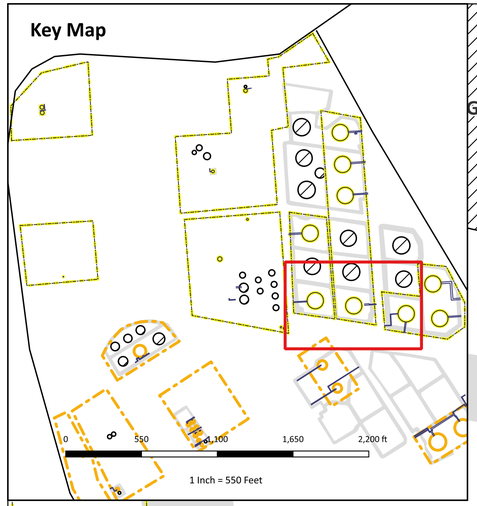
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 270)

FIGURE 10a

N:\GIS\Proj\P044.001_P1\MXD\F5_GSE and GPMO\Branch_AST\TG06\20250313\20250313_P044.001_BDH_AST_TG06_SD_Shutdown.mpr Figure 10a - GPR270 Analytical Results 2025-03-31T16:51:39.000 Created by: K. Lang Checked by: A.Spiers

Key Map



GP R 271

GP 274

GP 277

GP R 270
(Recovered Oil)

GP R 273
(Vacuum Gas Oil)

GP R 276
(Light Naphtha)

GP-271-GP-4
GP-271-GP-3
GP-271-GP-2
AOI7-BH-16-034
BH-10-32
B91-5
B91-6
AOI7 BH-12-94
B91-7
GP-277-PER6
GP-277-PER5
GP-277-SUB1
GP-277-LINE1
GP-277-SUB2
GP-277-PER4
GP-277-LINE3
GP-277-LINE2
GP-277-PER1
GP-277-SUB3
GP-277-PER2
GP-277-PER3
C-112
GPR270-15
GPR270-03
GPR270-01
GP-270-S-10
GP-270-S-11
GPR270-07
GPR270-08
GP-270-S-9
GPR270-09
GP-270-S-1
GP-270-S-2
GP-270-S-3
GP-270-S-4
GP-270-S-5
GP-270-S-6
GPR270-11
TG06-MW-01
GPR270-13
GP-270-S-15
GP-270-S-13
GP-270-S-14
GP-270-S-7
GPR270-16
GP-270-S-12
GP-270-S-8
GPR270-18
GPR270-14
GPR270-17
GPR270-19
C-133
GPR273-01
AOI7-BH-16-013
GPR273-02
GPR273-03
GPR273-04
AOI7-BH-16-014
GPR273-05
GPR273-07
GPR273-08
GPR273-09
GPR273-11
GPR273-12
AOI7-BH-16-016
GPR273-13
GPR273-14
AOI7-BH-16-015
C-132
B91-8
B91-19
B91-18
GPR276-20
BH-10-33
GPR276-01
GPR276-03
B91-20
GPR276-05
GPR276-06
GPR276-07
GPR276-11
GPR276-13
GPR276-16
B91-22
GPR276-12
TG06-MW-02
GPR276-18
GPR276-17

GPR273-04	4-4.5(ft)
VOCs	
Benzene	0.001 U
1,2-Dichloroethane	0.0021 U
Ethyl Benzene	0.0021 U
Methyl tert-butyl ether	0.0042 U
1,2,4-Trimethylbenzene	0.006
1,3,5-Trimethylbenzene	0.0022 J
SVOCs	
Benzo(a)pyrene	0.77
Naphthalene	2.4
Metals	
Lead	205

AOI7-BH-16-013	0-2(ft)	2-4(ft)
VOCs		
Benzene	0.66 U	0.081 J
1,2-Dichloroethane	0.66 U	0.66 U
Ethyl Benzene	0.66 U	0.66 U
Methyl tert-butyl ether	0.66 U	0.66 U
1,2,4-Trimethylbenzene	0.66 U	0.66 U
1,3,5-Trimethylbenzene	0.66 U	0.66 U
SVOCs		
Benzo(a)pyrene	1.3	1.8
Naphthalene	8	10
Metals		
Lead	418	425

GPR273-02	3-3.5(ft)
VOCs	
Benzene	0.00047 J
1,2-Dichloroethane	0.002 U
Ethyl Benzene	0.002 U
Methyl tert-butyl ether	0.0039 U
1,2,4-Trimethylbenzene	0.013
1,3,5-Trimethylbenzene	0.0059
SVOCs	
Benzo(a)pyrene	0.42 J
Naphthalene	2
Metals	
Lead	377

GPR273-03	4-4.5(ft)
VOCs	
Benzene	0.00098 U
1,2-Dichloroethane	0.002 U
Ethyl Benzene	0.00068 J
Methyl tert-butyl ether	0.0039 U
1,2,4-Trimethylbenzene	0.012
1,3,5-Trimethylbenzene	0.0086
SVOCs	
Benzo(a)pyrene	0.9
Naphthalene	1.2
Metals	
Lead	157

AOI7-BH-16-014	0-2(ft)
VOCs	
Benzene	0.007 U
1,2-Dichloroethane	0.007 U
Ethyl Benzene	0.007 U
Methyl tert-butyl ether	0.007 U
1,2,4-Trimethylbenzene	0.007 U
1,3,5-Trimethylbenzene	0.007 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	22
Metals	
Lead	**566 (C)**

GPR273-01	2-2.5(ft)
VOCs	
Benzene	0.069 J
1,2-Dichloroethane	0.0019 U
Ethyl Benzene	0.11 J
Methyl tert-butyl ether	0.00075 J
1,2,4-Trimethylbenzene	0.35
1,3,5-Trimethylbenzene	0.12
SVOCs	
Benzo(a)pyrene	1.3
Naphthalene	2.5
Metals	
Lead	272

GPR273-07	4-4.5(ft)
VOCs	
Benzene	0.00068 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0027 U
1,2,4-Trimethylbenzene	0.003 J
1,3,5-Trimethylbenzene	0.0011 J
SVOCs	
Benzo(a)pyrene	0.19 J
Naphthalene	0.7
Metals	
Lead	186

GPR273-05	1.5-2(ft)
VOCs	
Benzene	0.0056
1,2-Dichloroethane	0.0015 U
Ethyl Benzene	0.0024
Methyl tert-butyl ether	0.00046 J
1,2,4-Trimethylbenzene	0.011
1,3,5-Trimethylbenzene	0.0053
SVOCs	
Benzo(a)pyrene	0.52 U
Naphthalene	1.7
Metals	
Lead	**480 (C)**

GPR273-12	4-4.5(ft)
VOCs	
Benzene	0.00081 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0032 U
1,2,4-Trimethylbenzene	0.0015 J
1,3,5-Trimethylbenzene	0.0012 J
SVOCs	
Benzo(a)pyrene	0.75
Naphthalene	3.5
Metals	
Lead	429

AOI7-BH-16-016	0-2(ft)
VOCs	
Benzene	0.004 U
1,2-Dichloroethane	0.004 U
Ethyl Benzene	0.004 U
Methyl tert-butyl ether	0.004 U
1,2,4-Trimethylbenzene	0.004 U
1,3,5-Trimethylbenzene	0.004 U
SVOCs	
Benzo(a)pyrene	0.021
Naphthalene	0.017 J
Metals	
Lead	21.4

GPR273-13	2-2.5(ft)
VOCs	
Benzene	0.00078 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.00022 J
Methyl tert-butyl ether	0.0031 U
1,2,4-Trimethylbenzene	0.0022 J
1,3,5-Trimethylbenzene	0.0011 J
SVOCs	
Benzo(a)pyrene	0.22 J
Naphthalene	1.1
Metals	
Lead	401

GPR273-11	1.5-2(ft)
VOCs	
Benzene	0.00079 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0032 U
1,2,4-Trimethylbenzene	0.0032 U
1,3,5-Trimethylbenzene	0.00041 J
SVOCs	
Benzo(a)pyrene	0.42 J
Naphthalene	0.75
Metals	
Lead	410

AOI7-BH-16-015	0-2(ft)	2-4(ft)
VOCs		
Benzene	0.008 U	0.66 U
1,2-Dichloroethane	0.008 U	0.66 U
Ethyl Benzene	0.008 U	0.66 U
Methyl tert-butyl ether	0.008 U	0.66 U
1,2,4-Trimethylbenzene	0.008 U	0.66 U
1,3,5-Trimethylbenzene	0.008 U	0.66 U
SVOCs		
Benzo(a)pyrene	1.3	1.8
Naphthalene	12	10
Metals		
Lead	386	**452 (C)**

GPR273-14	3-3.5(ft)
VOCs	
Benzene	0.00068 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0027 U
1,2,4-Trimethylbenzene	0.0027 U
1,3,5-Trimethylbenzene	0.0027 U
SVOCs	
Benzo(a)pyrene	0.22 J
Naphthalene	1.8
Metals	
Lead	329

GPR273-08	2-2.5(ft)
VOCs	
Benzene	0.00084 U
1,2-Dichloroethane	0.0017 U
Ethyl Benzene	0.0017 U
Methyl tert-butyl ether	0.0029 J
1,2,4-Trimethylbenzene	0.003 J
1,3,5-Trimethylbenzene	0.0011 J
SVOCs	
Benzo(a)pyrene	1.1
Naphthalene	5.1
Metals	
Lead	410

GPR273-09	1-1.5(ft)
VOCs	
Benzene	0.00064 U / 0.0019
1,2-Dichloroethane	0.0013 U / 0.0017 U
Ethyl Benzene	0.0013 U / 0.086 J
Methyl tert-butyl ether	0.0025 U / 0.0033 U
1,2,4-Trimethylbenzene	0.0025 U / 0.31
1,3,5-Trimethylbenzene	0.0025 U / 0.1 J
SVOCs	
Benzo(a)pyrene	0.66 / 0.25
Naphthalene	1.7 / 0.76
Metals	
Lead	293 / 154

Chemical	(A) Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	(B) Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	(C) Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
Sampling Depth
Result
MSC Exceeded

GPR282-07	4-4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0099 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	**493 (C)**

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- - - Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium-Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 30 60 90 120 ft
1 Inch = 30 Feet

N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

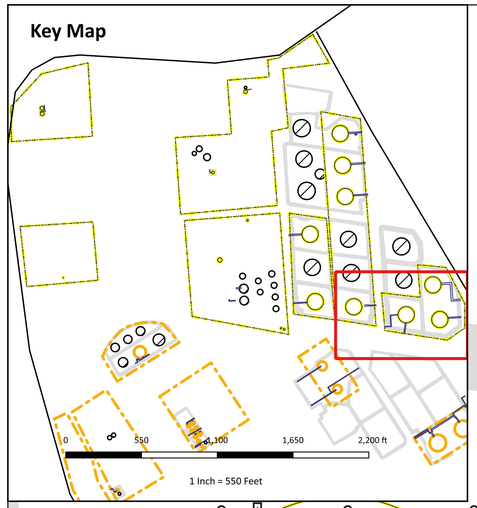
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 273)

FIGURE 10b

N:\GIS\Proj\P044.001_PEDRA #3\GIS\01_GIS and GPR\Figures_AST\TG06\20250213\20250213_P044.001_BDH_AST_TG06_SQ_Datashows.sgd - Figure 10b - GPR273 Analytical Results - 2025-01-13T16:51:19.000 Created by: A.Spiers Checked by: K.Long

Key Map



BH-10-33	1.5-2(ft)
VOCs	
Benzene	0.005 U
1,2-Dichloroethane	0.005 U
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.18 U
Naphthalene	0.18 U
Metals	
Lead	43.1

GPR276-07	4.5-5(ft)
VOCs	
Benzene	0.00046 U
1,2-Dichloroethane	0.00092 U
Ethyl Benzene	0.00092 U
Methyl tert-butyl ether	0.0018 U
1,2,4-Trimethylbenzene	0.0018 U
1,3,5-Trimethylbenzene	0.0018 U
SVOCs	
Benzo(a)pyrene	1.9
Naphthalene	0.38
Metals	
Lead	**896 (C)**

B91-19	0-2(ft)
VOCs	
Benzene	**1.1 (C)**
1,2-Dichloroethane	--
Ethyl Benzene	1.6
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	2.3
Metals	
Lead	**1110 (AC)**

GPR276-20	0.5-1(ft)	3-3.5(ft)
VOCs		
Benzene	0.00017 J	**5.2 (C)**
1,2-Dichloroethane	0.001 U	1.1 U
Ethyl Benzene	0.001 U	7.8
Methyl tert-butyl ether	0.0021 U	2.2 U
1,2,4-Trimethylbenzene	0.0021 U	20
1,3,5-Trimethylbenzene	0.0021 U	**110 (C)**
SVOCs		
Benzo(a)pyrene	0.16 U	0.94
Naphthalene	0.054	2.1
Metals		
Lead	8.29	181

GPR276-03	4.5-5(ft)
VOCs	
Benzene	**0.96 (C)**
1,2-Dichloroethane	0.11 U
Ethyl Benzene	0.51
Methyl tert-butyl ether	0.23 U
1,2,4-Trimethylbenzene	0.77
1,3,5-Trimethylbenzene	0.3
SVOCs	
Benzo(a)pyrene	0.88
Naphthalene	1.3
Metals	
Lead	84.6

GPR276-01	4.5-5(ft)
VOCs	
Benzene	0.04 J
1,2-Dichloroethane	0.13 U
Ethyl Benzene	0.06 J
Methyl tert-butyl ether	0.25 U
1,2,4-Trimethylbenzene	0.076 J
1,3,5-Trimethylbenzene	0.028 J
SVOCs	
Benzo(a)pyrene	2.6
Naphthalene	14
Metals	
Lead	**475 (C)**

B91-18	2-4(ft)
VOCs	
Benzene	0.087 U
1,2-Dichloroethane	0.87 U
Ethyl Benzene	0.087 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	1.7
Naphthalene	3.7
Metals	
Lead	182

B91-20	2-4(ft)
VOCs	
Benzene	0.091 U
1,2-Dichloroethane	--
Ethyl Benzene	0.091 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	2.4
Metals	
Lead	189

GPR276-21	0.5-1(ft)	2.5-3(ft)
VOCs		
Benzene	0.00049	**1.1 (C)**
1,2-Dichloroethane	0.00095 U	0.51 U
Ethyl Benzene	0.00031 J	6.5
Methyl tert-butyl ether	0.0019 U	1 U
1,2,4-Trimethylbenzene	0.00049 J	7
1,3,5-Trimethylbenzene	0.00034 J	12
SVOCs		
Benzo(a)pyrene	2	2.6
Naphthalene	0.21	2.6
Metals		
Lead	82.4	71.1

GPR276-15	4.5-5(ft)
VOCs	
Benzene	0.083
1,2-Dichloroethane	0.037 J
Ethyl Benzene	0.087
Methyl tert-butyl ether	0.11 U
1,2,4-Trimethylbenzene	0.066 J
1,3,5-Trimethylbenzene	0.051 J
SVOCs	
Benzo(a)pyrene	0.38
Naphthalene	5.8
Metals	
Lead	7.08

GPR276-05	4.5-5(ft)
VOCs	
Benzene	0.00095 U
1,2-Dichloroethane	0.0019 U
Ethyl Benzene	0.0019 U
Methyl tert-butyl ether	0.0038 U
1,2,4-Trimethylbenzene	0.0038 U
1,3,5-Trimethylbenzene	0.0038 U
SVOCs	
Benzo(a)pyrene	1.7
Naphthalene	16
Metals	
Lead	198

GPR276-06	4.5-5(ft)
VOCs	
Benzene	0.00056 U
1,2-Dichloroethane	0.0011 U
Ethyl Benzene	0.00027 J
Methyl tert-butyl ether	0.0022 U
1,2,4-Trimethylbenzene	0.0033
1,3,5-Trimethylbenzene	0.0067
SVOCs	
Benzo(a)pyrene	0.51
Naphthalene	2
Metals	
Lead	82.9

GPR276-16	0.5-1(ft)	2-2.5(ft)	4.5-5(ft)	5-5.5(ft)	9.5-10(ft)
VOCs					
Benzene	0.42	**0.77 (C)**	0.014	0.059 J	0.001 U
1,2-Dichloroethane	0.052 U	0.11 U	0.0018 U	0.13 U	0.0021 U
Ethyl Benzene	0.23	0.39	0.0018 U	0.054 J	0.00054 J
Methyl tert-butyl ether	0.1 U	0.21 U	0.0036 U	0.26 U	0.0042 U
1,2,4-Trimethylbenzene	12	0.72	0.024	0.13 J	0.0022 J
1,3,5-Trimethylbenzene	13	0.74	0.013	0.079 J	0.0011 J
SVOCs					
Benzo(a)pyrene	0.72 U	0.46	**59 (C)**	15	0.24
Naphthalene	0.18 U	0.76	6.4	4.3	0.27
Metals					
Lead	87.9	205	284	307	254

GPR276-11	4.5-5(ft)
VOCs	
Benzene	0.00083 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0033 U
1,2,4-Trimethylbenzene	0.0022 J
1,3,5-Trimethylbenzene	0.00063 J
SVOCs	
Benzo(a)pyrene	2.2
Naphthalene	7.9
Metals	
Lead	397

GPR276-18	0.5-1(ft)	4.5-5(ft)	9.5-10(ft)
VOCs			
Benzene	0.00073	0.00073 U	0.0009 U
1,2-Dichloroethane	0.0013 U	0.0014 U	0.0018 U
Ethyl Benzene	0.00036 J	0.0014 U	0.00057 J
Methyl tert-butyl ether	0.0026 U	0.0089	0.00042 J
1,2,4-Trimethylbenzene	0.00051 J	0.0014 J	0.0058
1,3,5-Trimethylbenzene	0.0026 U	0.00048 J	0.0027 J
SVOCs			
Benzo(a)pyrene	0.59	0.51	0.34
Naphthalene	0.5	0.84	0.67
Metals			
Lead	88.1	359	280

GPR276-12	0.5-1(ft)	2-2.5(ft)	4.5-5(ft)	6-6.5(ft)	9.5-10(ft)
VOCs					
1,2-Dichloroethane	0.0005 U	0.00071 U	**7.9 (C)**	0.00096 U	0.00076 U
Ethyl Benzene	0.00099 U	0.0014 U	0.14 U	0.0019 U	0.0015 U
Methyl tert-butyl ether	0.00099 U	0.0003 J	4.2	0.0019 U	0.0015 U
1,2,4-Trimethylbenzene	0.002 U	0.0028 U	0.28 U	0.0038 U	0.003 U
1,3,5-Trimethylbenzene	0.002 U	0.0016 J	2.8	0.0025 J	0.00083 J
SVOCs	0.002 U	0.0011 J	0.9	0.0012 J	0.00031 J
Benzo(a)pyrene	0.26	1.6	9.2	1 J	2.6
Naphthalene	0.038 U	1.3	4.2	4.3	1.9
Metals					
Lead	112	167	131	390	152

GPR276-19	0.5-1(ft)	6.5-7(ft)	9.5-10(ft)
VOCs			
Benzene	0.00066 U	0.00086 U	0.00091 U
1,2-Dichloroethane	0.0013 U	0.0017 U	0.0018 U
Ethyl Benzene	0.0013 U	0.00028 J	0.00035 J
Methyl tert-butyl ether	0.0026 U	0.0034 U	0.0036 U
1,2,4-Trimethylbenzene	0.0026 U	0.0032 J	0.0025 J
1,3,5-Trimethylbenzene	0.0026 U	0.001 J	0.002 J
SVOCs			
Benzo(a)pyrene	0.96	1	0.8
Naphthalene	0.38	3.3	0.58
Metals			
Lead	315	280	157

B91-22	2-4(ft)
VOCs	
Benzene	0.1 U
1,2-Dichloroethane	--
Ethyl Benzene	0.1 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	1.8
Metals	
Lead	270

GPR276-17	4.5-5(ft)
VOCs	
Benzene	0.17
1,2-Dichloroethane	0.12 U
Ethyl Benzene	0.32
Methyl tert-butyl ether	0.24 U
1,2,4-Trimethylbenzene	0.99
1,3,5-Trimethylbenzene	0.31
SVOCs	
Benzo(a)pyrene	1.8
Naphthalene	8
Metals	
Lead	383

GPR276-13	4.5-5(ft)
VOCs	
Benzene	0.00081 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0032 U
1,2,4-Trimethylbenzene	0.0032 U
1,3,5-Trimethylbenzene	0.0032 U
SVOCs	
Benzo(a)pyrene	4
Naphthalene	14
Metals	
Lead	167

B91-21	2-4(ft)
VOCs	
Benzene	0.0012 U
1,2-Dichloroethane	--
Ethyl Benzene	0.0017
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.37 J
Metals	
Lead	191

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

GPR282-07	4.4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	**493 (C)**

Sampling Depth

Result

MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium-Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 30 60 90 120 ft

1 Inch = 30 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

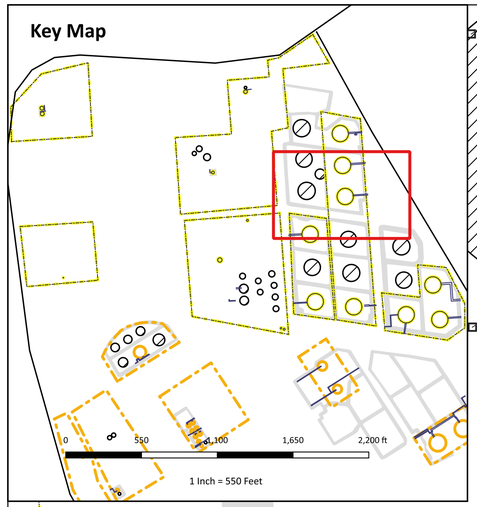
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 276)

FIGURE 10c

N:\GIS\P\P044.001_P1084.PRJ\GIS_Out2 and GPKG\Revised_AST\TG06\20250513\20250228_P044.001_BDH_AST_TG06_SO_Databases.rpt - Figure 10c - GPR276 Analytical Results - 2025-05-13T16:51:39.000 Created by: A.Sykes Checked by: K. Long

Key Map



GP R 280

GP280-02
GP280-04
GP280-11
GP280-05
GP280-06
GP280-07
GP280-12

AOI7-BH-16-006	0-2(ft)
VOCs	
Benzene	0.24 U
1,2-Dichloroethane	0.24 U
Ethyl Benzene	0.24 U
Methyl tert-butyl ether	0.24 U
1,2,4-Trimethylbenzene	0.62
1,3,5-Trimethylbenzene	0.13 J
SVOCs	
Benzo(a)pyrene	1
Naphthalene	0.3
Metals	
Lead	63.6

C-96

GP 1113

GP R 282
(Vacuum Gas Oil)

GPR282-01
GPR282-03
GPR282-05
GPR282-07
GPR282-08
GPR282-10
GPR282-12
GPR282-13

GPR281-14	4.5-5(ft)
VOCs	
Benzene	0.00087 U
1,2-Dichloroethane	0.0017 U
Ethyl Benzene	0.0017 U
Methyl tert-butyl ether	0.0035 U
1,2,4-Trimethylbenzene	0.00095 J
1,3,5-Trimethylbenzene	0.00049 J
SVOCs	
Benzo(a)pyrene	0.8
Naphthalene	3.8
Metals	
Lead	340

C-50
C-174
BH-10-23
AOI7 BH-12-80
B90-1
AOI7 BH-12-79
BH-10-24
B90-3
B90-2
BH-10-25
AOI7 BH-12-82
B90-5
BH-10-30 ;2-83
C-110
B90-4
B90-8
B90-7
B90-6
BH-10-29 ;2-84
B90-9
AOI7-BH-16-037
AOI7-BH-16-036
BH-10-28
B90-11
C-109
B90-12
B90-12DL
AOI7 BH-12-85
BH-10-26
AOI7 BH-12-100
AOI7 BH-12-87

GPR281-08	4.5-5(ft)
VOCs	
Benzene	0.00075 U
1,2-Dichloroethane	0.0015 U
Ethyl Benzene	0.0015 U
Methyl tert-butyl ether	0.003 U
1,2,4-Trimethylbenzene	0.00067 J
1,3,5-Trimethylbenzene	0.003 U
SVOCs	
Benzo(a)pyrene	0.51
Naphthalene	4.4
Metals	
Lead	206

GPR281-07	4.5-5(ft)
VOCs	
Benzene	0.0004 U
1,2-Dichloroethane	0.00081 U
Ethyl Benzene	0.00081 U
Methyl tert-butyl ether	0.0016 U
1,2,4-Trimethylbenzene	0.0024
1,3,5-Trimethylbenzene	0.0016 U
SVOCs	
Benzo(a)pyrene	0.061 J
Naphthalene	0.032 J
Metals	
Lead	33.7

AOI7-BH-16-005	0-2(ft)
VOCs	
Benzene	0.006 U
1,2-Dichloroethane	0.006 U
Ethyl Benzene	0.006 U
Methyl tert-butyl ether	0.006 U
1,2,4-Trimethylbenzene	0.006 U
1,3,5-Trimethylbenzene	0.006 U
SVOCs	
Benzo(a)pyrene	0.66
Naphthalene	5.2
Metals	
Lead	130

AOI7-BH-16-035

GP 279

AOI7-BH-16-005
GPR281-01

GPR281-01	4.5-5(ft)
VOCs	
Benzene	0.0008 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0032 U
1,2,4-Trimethylbenzene	0.0014 J
1,3,5-Trimethylbenzene	0.00052 J
SVOCs	
Benzo(a)pyrene	0.3
Naphthalene	4.5
Metals	
Lead	284

GPR281-13	3.5-4(ft)
VOCs	
Benzene	0.00079 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0031 U
1,2,4-Trimethylbenzene	0.0031 U
1,3,5-Trimethylbenzene	0.00038 J
SVOCs	
Benzo(a)pyrene	0.83
Naphthalene	2.6
Metals	
Lead	445

AOI7-BH-16-024
AOI7-BH-16-023

GP R 281
(Vacuum Gas Oil)

GPR281-13
AOI7-BH-16-008
AOI7-BH-16-007
GPR281-10
GPR281-11
GPR281-12
GPR281-14
AOI7-BH-16-006
GPR281-07
GPR281-08

GPR281-10	3.5-4(ft)
VOCs	
Benzene	0.0011 U
1,2-Dichloroethane	0.0022 U
Ethyl Benzene	0.0022 U
Methyl tert-butyl ether	0.0044 U
1,2,4-Trimethylbenzene	0.00085 J
1,3,5-Trimethylbenzene	0.0044 U
SVOCs	
Benzo(a)pyrene	1.9
Naphthalene	4.9
Metals	
Lead	363

AOI7-BH-16-008	0-2(ft)
VOCs	
Benzene	0.0008 J
1,2-Dichloroethane	0.005 U
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.2
Naphthalene	0.34
Metals	
Lead	85.4

GPR281-11	4.5-5(ft)
VOCs	
Benzene	0.00037 J
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.00021 J
Methyl tert-butyl ether	0.0026 U
1,2,4-Trimethylbenzene	0.0012 J
1,3,5-Trimethylbenzene	0.00045 J
SVOCs	
Benzo(a)pyrene	0.1 J
Naphthalene	0.068 J
Metals	
Lead	24.4

GPR281-12	4.5-5(ft)
VOCs	
Benzene	0.00036 J
1,2-Dichloroethane	0.0011 U
Ethyl Benzene	0.00016 J
Methyl tert-butyl ether	0.0022 U
1,2,4-Trimethylbenzene	0.00038 J
1,3,5-Trimethylbenzene	0.0022 U
SVOCs	
Benzo(a)pyrene	0.74 U
Naphthalene	0.93 U
Metals	
Lead	162

AOI7-BH-16-007	0-2(ft)
VOCs	
Benzene	0.005 U
1,2-Dichloroethane	0.005 U
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.053
Naphthalene	0.28
Metals	
Lead	241

PH-41
GPR272-01
AOI7-BH-16-009
GPR272-02
GPR272-05
GPR272-06
GPR272-07
GPR272-03
AOI7-BH-16-010
GP-275-PER3
GP-275-PER2
GP-275-PER4
GPR272-04
GPR272-09
GPR272-10
GPR272-11
C-58

GP R 272
(Recovered Oil)

GPR272-12

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

0 30 60 90 120 ft
1 Inch = 30 Feet

N

Legend
- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
Sampling Depth
Result
MSC Exceeded

GPR282-07	4.4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	493 (C)

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
-- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

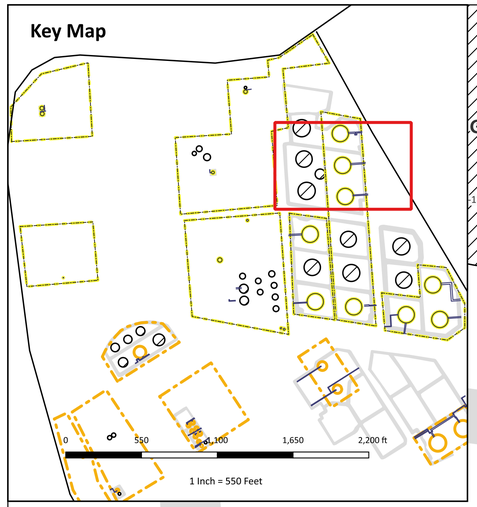
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 281)

FIGURE 10d

N:\GIS\P\P044.001_PEGRA PRS\GIS\01_GDZ and GPKG\Branch_AST\TG06\20250313\20250238_P044.001_BDH_AST_TG06_SO_Databases.ggb - Figure 10d - GPR281 Analytical Results - 2025-03-13T16:51:39.000 - Created by: A.Sperry - Checked by: K. Long

Key Map



GP 283

AST 283-SB-5
AST 283-SB-4
AST 283-SB-3
AST 283-SB-2
AOI7-BH-16-021

GPR282-01	4.5-5(ft)
VOCs	
Benzene	0.00065 U
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.0013 U
Methyl tert-butyl ether	0.0026 U
1,2,4-Trimethylbenzene	0.00053 J
1,3,5-Trimethylbenzene	0.00028 J
SVOCs	
Benzo(a)pyrene	1.8
Naphthalene	3.4
Metals	
Lead	**1520 (C)**

GP R 284
(Vacuum Gas Oil)

GPR284-01
GPR284-03
GPR284-03
GPR284-05
GPR284-07
GPR284-08
GPR284-11
GPR284-09
GPR284-10
GPR284-02
GPR284-04
GPR284-13
GPR284-14
TG06-MW-03
GPR284-15
GPR284-01
AOI7-BH-16-020
AOI7-BH-16-019
GPR284-16

GPR282-03	4.5-5(ft)
VOCs	
Benzene	0.00057 U
1,2-Dichloroethane	0.0011 U
Ethyl Benzene	0.0011 U
Methyl tert-butyl ether	0.0023 U
1,2,4-Trimethylbenzene	0.00085 J
1,3,5-Trimethylbenzene	0.00027 J
SVOCs	
Benzo(a)pyrene	0.44
Naphthalene	2.5
Metals	
Lead	184

GPR282-07	4-4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	**493 (C)**

GPR282-08	4.5-5(ft)
VOCs	
Benzene	0.00098 U
1,2-Dichloroethane	0.002 U
Ethyl Benzene	0.00029 J
Methyl tert-butyl ether	0.0039 U
1,2,4-Trimethylbenzene	0.0057
1,3,5-Trimethylbenzene	0.0014 J
SVOCs	
Benzo(a)pyrene	2
Naphthalene	7.7
Metals	
Lead	343

AOI7 BH-12-78
C-50
C-174
BH-10-23
AOI7 BH-12-80
B90-1
AOI7 BH-12-79

GP-R 280

GP280-03
GP280-02
GP280-04
GP280-10
GP280-01
GP280-11
GP280-09
GP280-05
GP280-06
GP280-08
C-57

GPR282-05	4-4.5(ft)
VOCs	
Benzene	0.0009 U
1,2-Dichloroethane	0.0018 U
Ethyl Benzene	0.0018 U
Methyl tert-butyl ether	0.0036 U
1,2,4-Trimethylbenzene	0.0036 U
1,3,5-Trimethylbenzene	0.0036 U
SVOCs	
Benzo(a)pyrene	1.5
Naphthalene	0.86
Metals	
Lead	412

GP280-07
GP280-12

C-96

GP R 282
(Vacuum Gas Oil)

GPR282-01
GPR282-03
GPR282-05
GPR282-07
GPR282-08

BH-10-24
B90-3
B90-2
BH-10-25
B90-5
BH-10-30 ,2-83
C-110
B90-4

GP 1113

GPR282-10
GPR282-12
GPR282-13

GPR282-10	3-3.5(ft)
VOCs	
Benzene	0.094
1,2-Dichloroethane	0.15 U
Ethyl Benzene	0.11 J
Methyl tert-butyl ether	0.3 U
1,2,4-Trimethylbenzene	0.22 J
1,3,5-Trimethylbenzene	0.11 J
SVOCs	
Benzo(a)pyrene	12
Naphthalene	5.3
Metals	
Lead	411

GPR282-13	3-3.5(ft)
VOCs	
Benzene	0.00063 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0025 U
1,2,4-Trimethylbenzene	0.00085 J
1,3,5-Trimethylbenzene	0.0025 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	1.4
Metals	
Lead	438

GPR282-12	4-4.5(ft)
VOCs	
Benzene	0.00066 U
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.0013 U
Methyl tert-butyl ether	0.0026 U
1,2,4-Trimethylbenzene	0.0026 U
1,3,5-Trimethylbenzene	0.00028 J
SVOCs	
Benzo(a)pyrene	0.52
Naphthalene	9.6
Metals	
Lead	295

AOI7 BH-12-82

GP 279

AOI7-BH-16-035
AOI7-BH-16-005
GPR281-01
GPR281-14
AOI7-BH-16-006

GP R 281
(Vacuum Gas Oil)

GPR281-13
GPR281-07
GPR281-08
AOI7-BH-16-008
AOI7-BH-16-007
GPR281-10
GPR281-11
GPR281-12
AOI7-BH-16-024

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

0 30 60 90 120 ft
1 Inch = 30 Feet

N

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

GPR282-07	4-4.5(ft) ← Sampling Depth
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2 ← Result
Naphthalene	3.2
Metals	
Lead	**493 (C)** ← MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium-Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC

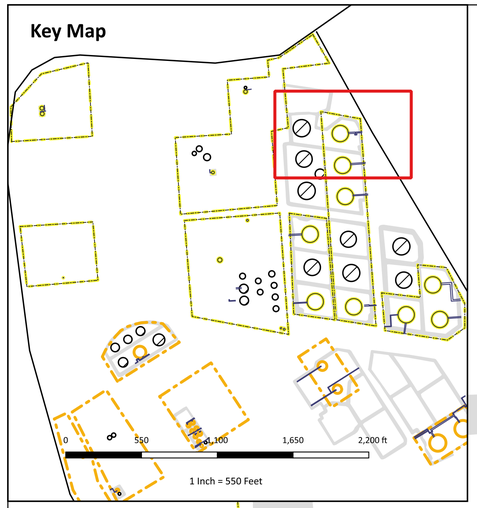
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 282)

FIGURE 10e

N:\GIS\Proj\P044.001_P\GRA\FIGS\GIS\FS_Q02 and Q04\Q3\Branch_AST\TG06\20250131\20250131QC2328_P044.001_BDH_AST_TG06_SQ_Shutdown.sgd Figure 10e - GPR282 Analytical Results 2025-01-31T16:51:19.000 Created by: A.Speers Checked by: K. Long



GPR284-01	2.5-3(ft)
VOCs	
Benzene	0.00078 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0031 U
1,2,4-Trimethylbenzene	0.0031 U
1,3,5-Trimethylbenzene	0.0031 U
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	3.2
Metals	
Lead	112

GPR284-03	4.5-5(ft)
VOCs	
Benzene	0.00068 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0027 U
1,2,4-Trimethylbenzene	0.0027 U
1,3,5-Trimethylbenzene	0.0027 U
SVOCs	
Benzo(a)pyrene	2
Naphthalene	4.9
Metals	
Lead	63.3

GPR284-17	2.5-3(ft)
VOCs	
Benzene	0.00052 U
1,2-Dichloroethane	0.001 U
Ethyl Benzene	0.001 U
Methyl tert-butyl ether	0.0021 U
1,2,4-Trimethylbenzene	0.0021 U
1,3,5-Trimethylbenzene	0.0021 U
SVOCs	
Benzo(a)pyrene	1.6
Naphthalene	0.74
Metals	
Lead	96.8

GPR284-03	0.5-1(ft)
VOCs	
Benzene	0.005 U
1,2-Dichloroethane	--
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.19
Naphthalene	0.54
Metals	
Lead	--

GPR284-07	4.5-5(ft)
VOCs	
Benzene	0.00077 U
1,2-Dichloroethane	0.0015 U
Ethyl Benzene	0.00047 J
Methyl tert-butyl ether	0.0031 U
1,2,4-Trimethylbenzene	0.00084 J
1,3,5-Trimethylbenzene	0.00054 J
SVOCs	
Benzo(a)pyrene	0.29 J
Naphthalene	0.93 J
Metals	
Lead	186

GPR284-08	4.5-5(ft)
VOCs	
Benzene	0.0005 U
1,2-Dichloroethane	0.001 U
Ethyl Benzene	0.001 U
Methyl tert-butyl ether	0.002 U
1,2,4-Trimethylbenzene	0.002 U
1,3,5-Trimethylbenzene	0.002 U
SVOCs	
Benzo(a)pyrene	1.1
Naphthalene	0.92
Metals	
Lead	92.5

GPR284-11	4-4.5(ft)
VOCs	
Benzene	0.00072 U
1,2-Dichloroethane	0.0014 U
Ethyl Benzene	0.0014 U
Methyl tert-butyl ether	0.0029 U
1,2,4-Trimethylbenzene	0.0029 U
1,3,5-Trimethylbenzene	0.0029 U
SVOCs	
Benzo(a)pyrene	3.2
Naphthalene	3.3
Metals	
Lead	59.1

GPR284-10	4-4.5(ft)
VOCs	
Benzene	0.00054 U / 0.0012 U
1,2-Dichloroethane	0.0011 U / 0.0023 U
Ethyl Benzene	0.0011 U / 0.0023 U
Methyl tert-butyl ether	0.0022 U / 0.0046 U
1,2,4-Trimethylbenzene	0.00059 J / 0.0046 U
1,3,5-Trimethylbenzene	0.0022 U / 0.0046 U
SVOCs	
Benzo(a)pyrene	2.8 / 3.3
Naphthalene	4.2 / 4.1
Metals	
Lead	95.3 / 69.8

GPR284-09	4.5-5(ft)
VOCs	
Benzene	0.00066 U
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.0013 U
Methyl tert-butyl ether	0.0026 U
1,2,4-Trimethylbenzene	0.0026 U
1,3,5-Trimethylbenzene	0.0026 U
SVOCs	
Benzo(a)pyrene	3
Naphthalene	5.2
Metals	
Lead	89.5

GPR284-02	0.5-1(ft)
VOCs	
Benzene	0.006 U
1,2-Dichloroethane	--
Ethyl Benzene	0.006 U
Methyl tert-butyl ether	0.006 U
1,2,4-Trimethylbenzene	0.006 U
1,3,5-Trimethylbenzene	0.006 U
SVOCs	
Benzo(a)pyrene	0.46
Naphthalene	1.8
Metals	
Lead	--

GPR284-05	4.5-5(ft)
VOCs	
Benzene	0.023 J
1,2-Dichloroethane	0.058 U
Ethyl Benzene	0.087
Methyl tert-butyl ether	0.12 U
1,2,4-Trimethylbenzene	0.75
1,3,5-Trimethylbenzene	0.54
SVOCs	
Benzo(a)pyrene	0.32
Naphthalene	0.65
Metals	
Lead	125

GPR284-04	0.5-1(ft)
VOCs	
Benzene	0.005 U
1,2-Dichloroethane	--
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.006
1,3,5-Trimethylbenzene	0.013
SVOCs	
Benzo(a)pyrene	0.28 J
Naphthalene	0.1 J
Metals	
Lead	--

AOI7-BH-16-020	0-2(ft)	0-2(ft)	2-4(ft)
VOCs			
Benzene	0.009 U	0.004 U	0.15 J
1,2-Dichloroethane	0.009 U	0.004 U	0.66 U
Ethyl Benzene	0.009 U	0.004 U	0.23 J
Methyl tert-butyl ether	0.009 U	0.004 U	0.66 U
1,2,4-Trimethylbenzene	0.009 U	0.004 U	0.18 J
1,3,5-Trimethylbenzene	0.009 U	0.004 U	0.66 U
SVOCs			
Benzo(a)pyrene	0.085	0.48	1.8
Naphthalene	0.025	1	15
Metals			
Lead	13.9	351	281

GPR284-13	4.5-5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0033 U
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	17
Naphthalene	6.7
Metals	
Lead	87.6

GPR284-14	4.5-5(ft)
VOCs	
Benzene	0.00051 U
1,2-Dichloroethane	0.001 U
Ethyl Benzene	0.001 U
Methyl tert-butyl ether	0.002 U
1,2,4-Trimethylbenzene	0.002 U
1,3,5-Trimethylbenzene	0.002 U
SVOCs	
Benzo(a)pyrene	2.3
Naphthalene	2.8
Metals	
Lead	30.1

GPR284-01	0.5-1(ft)
VOCs	
Benzene	0.005 U
1,2-Dichloroethane	--
Ethyl Benzene	0.005 U
Methyl tert-butyl ether	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.44 J
Naphthalene	0.71
Metals	
Lead	--

GPR284-15	0.5-1(ft)	4.5-5(ft)	9-9.5(ft)	9.5-10(ft)
VOCs				
Benzene	0.00047 U	0.0002 J	0.00082 U	0.00096 U
1,2-Dichloroethane	0.00095 U	0.001 U	0.0016 U	0.0019 U
Ethyl Benzene	0.00018 J	0.001 U	0.0016 U	0.00032 J
Methyl tert-butyl ether	0.0019 U	0.0021 U	0.0033 U	0.0038 U
1,2,4-Trimethylbenzene	0.0006 J	0.0021 U	0.0013 J	0.0039
1,3,5-Trimethylbenzene	0.00019 J	0.0021 U	0.0008 J	0.0011 J
SVOCs				
Benzo(a)pyrene	2	2	0.59	0.45
Naphthalene	0.73	0.049 J	0.99	1.1
Metals				
Lead	221	**5090 (C)**	176	**459 (C)**

AOI7-BH-16-019	0-2(ft)
VOCs	
Benzene	0.0006 J
1,2-Dichloroethane	0.004 U
Ethyl Benzene	0.004 U
Methyl tert-butyl ether	0.004 U
1,2,4-Trimethylbenzene	0.002 J
1,3,5-Trimethylbenzene	0.002 J
SVOCs	
Benzo(a)pyrene	0.22
Naphthalene	0.68
Metals	
Lead	117

GPR284-16	0.5-1(ft)	7.5-8(ft)	9.5-10(ft)
VOCs			
Benzene	0.00071 U	0.00057 U	0.00081 U
1,2-Dichloroethane	0.0014 U	0.0011 U	0.0016 U
Ethyl Benzene	0.0014 U	0.0011 U	0.00027 J
Methyl tert-butyl ether	0.0028 U	0.0023 U	0.0032 U
1,2,4-Trimethylbenzene	0.0028 U	0.0015 J	0.0011 J
1,3,5-Trimethylbenzene	0.0028 U	0.00094 J	0.00046 J
SVOCs			
Benzo(a)pyrene	0.95	5.3	0.3
Naphthalene	0.53	2.4	0.82
Metals			
Lead	339	84.2	317

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS < 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

GP 283

GP R 284
(Vacuum Gas Oil)

GP R 280

GP R 282
(Vacuum Gas Oil)

GP 1113

AST 283-CV-1
AST 283-SB-5
AST 283-SB-1
AST 283-SB-4
AST 283-SB-3
AST 283-SB-2
AOI7-BH-16-021
AOI7-BH-16-020
AOI7-BH-16-039
AOI7 BH-12-74
AOI7 BH-12-75
AOI7 BH-12-76
AOI7-BH-16-019
AOI7 BH-12-78
AOI7 BH-12-79
BH-10-23
AOI7 BH-12
BH-10-24
B90-2
S-433
S-507
S-69D
S-69
BF-103r
S-435
S-483
C-130
H-12-73
C-50
C-174
C-57
C-96
TG06-MW-03
GPR284-01
GPR284-02
GPR284-03
GPR284-04
GPR284-05
GPR284-07
GPR284-08
GPR284-09
GPR284-10
GPR284-11
GPR284-13
GPR284-14
GPR284-15
GPR284-16
GPR284-17
GP280-01
GP280-02
GP280-03
GP280-04
GP280-05
GP280-06
GP280-07
GP280-09
GP280-10
GP280-11
GP280-12
GPR282-05
GPR282-07
GPR282-08
GPR282-10
GPR282-12
GPR282-13

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
Sampling Depth
Result
MSC Exceeded

GPR282-07	4-4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0033 U
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	**493 (C)**

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 30 60 90 120 ft
1 Inch = 30 Feet

N

SAFETY FIRST

terraphase engineering

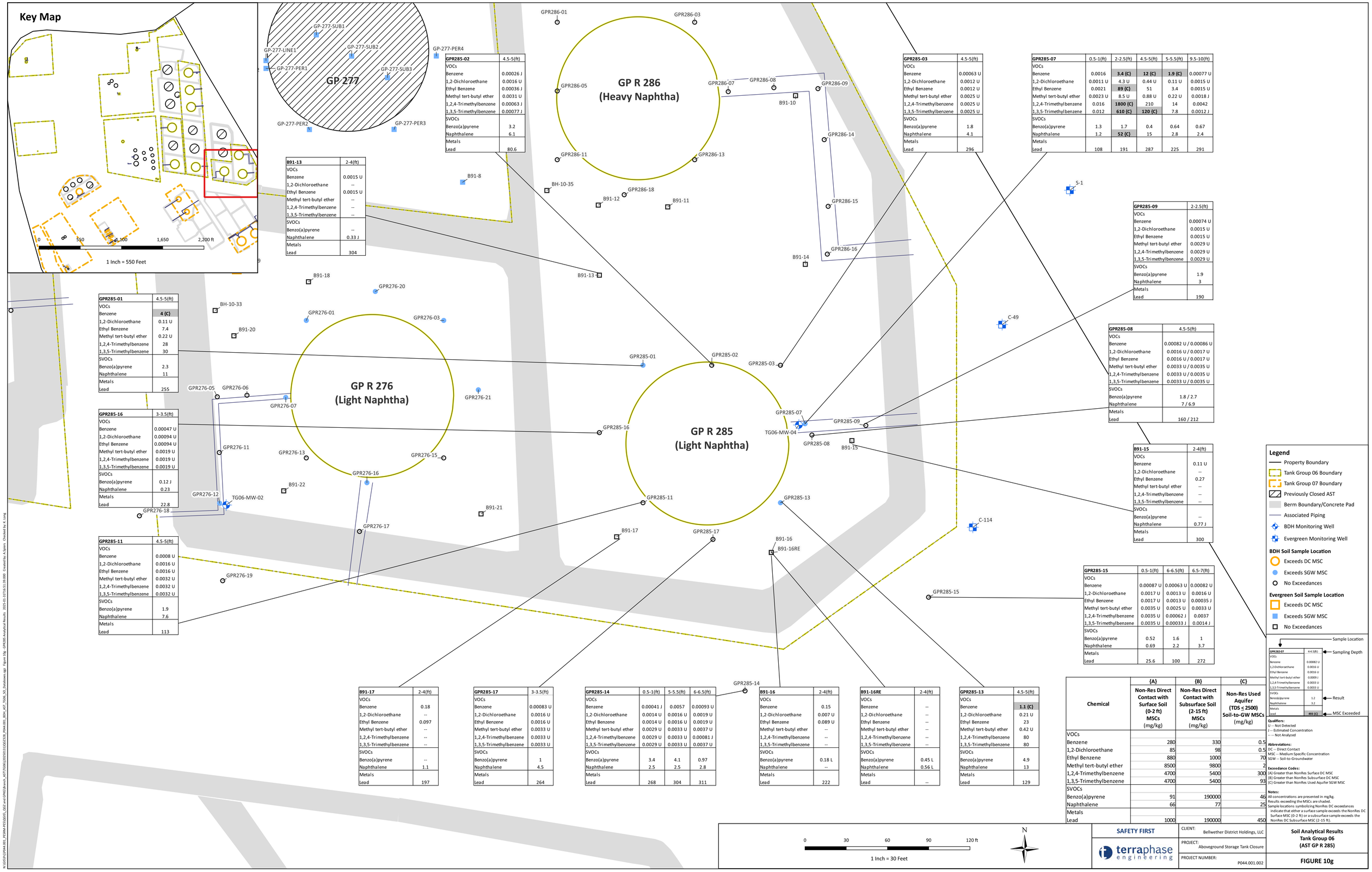
CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 284)

FIGURE 10f

R:\GIS\MXD\P044.001_P1284\P1SGIS_QGIS and GPKG\Branch_AST\TG06\20250313\250328_P044.001_BDH_AST_TG06_SO_Shaleview.qgz Figure 10f - GPR284 Analytical Results - 2025-03-31T16:51:39.000 Created by: A.Speers Checked by: K. Long

Key Map



B91-13	2-4(ft)
VOCs	
Benzene	0.0015 U
1,2-Dichloroethane	--
Ethyl Benzene	0.0015 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.33 J
Metals	
Lead	304

GPR285-02	4.5-5(ft)
VOCs	
Benzene	0.00026 J
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.00036 J
Methyl tert-butyl ether	0.0031 U
1,2,4-Trimethylbenzene	0.00063 J
1,3,5-Trimethylbenzene	0.00077 J
SVOCs	
Benzo(a)pyrene	3.2
Naphthalene	6.1
Metals	
Lead	80.6

GPR285-03	4.5-5(ft)
VOCs	
Benzene	0.00063 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0025 U
1,2,4-Trimethylbenzene	0.0025 U
1,3,5-Trimethylbenzene	0.0025 U
SVOCs	
Benzo(a)pyrene	1.8
Naphthalene	4.1
Metals	
Lead	296

GPR285-07	0.5-1(ft)	2-2.5(ft)	4.5-5(ft)	5-5.5(ft)	9.5-10(ft)
VOCs					
Benzene	0.0016	**3.4 (C)**	**12 (C)**	**1.9 (C)**	0.00077 U
1,2-Dichloroethane	0.0011 U	4.3 U	0.44 U	0.11 U	0.0015 U
Ethyl Benzene	0.0021	**89 (C)**	51	3.4	0.0015 U
Methyl tert-butyl ether	0.0023 U	8.5 U	0.88 U	0.22 U	0.0018 J
1,2,4-Trimethylbenzene	0.016	**1800 (C)**	210	14	0.0042
1,3,5-Trimethylbenzene	0.012	**610 (C)**	**120 (C)**	7.8	0.0012 J
SVOCs					
Benzo(a)pyrene	1.3	1.7	0.4	0.64	0.67
Naphthalene	1.2	**52 (C)**	15	2.8	2.4
Metals					
Lead	108	191	287	225	291

GPR285-09	2-2.5(ft)
VOCs	
Benzene	0.00074 U
1,2-Dichloroethane	0.0015 U
Ethyl Benzene	0.0015 U
Methyl tert-butyl ether	0.0029 U
1,2,4-Trimethylbenzene	0.0029 U
1,3,5-Trimethylbenzene	0.0029 U
SVOCs	
Benzo(a)pyrene	1.9
Naphthalene	3
Metals	
Lead	190

GPR285-08	4.5-5(ft)
VOCs	
Benzene	0.00082 U / 0.00086 U
1,2-Dichloroethane	0.0016 U / 0.0017 U
Ethyl Benzene	0.0016 U / 0.0017 U
Methyl tert-butyl ether	0.0033 U / 0.0035 U
1,2,4-Trimethylbenzene	0.0033 U / 0.0035 U
1,3,5-Trimethylbenzene	0.0033 U / 0.0035 U
SVOCs	
Benzo(a)pyrene	1.8 / 2.7
Naphthalene	7 / 6.9
Metals	
Lead	160 / 212

B91-15	2-4(ft)
VOCs	
Benzene	0.11 U
1,2-Dichloroethane	--
Ethyl Benzene	0.27
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.77 J
Metals	
Lead	300

GPR285-15	0.5-1(ft)	6-6.5(ft)	6.5-7(ft)
VOCs			
Benzene	0.00087 U	0.00063 U	0.00082 U
1,2-Dichloroethane	0.0017 U	0.0013 U	0.0016 U
Ethyl Benzene	0.0017 U	0.0013 U	0.00035 J
Methyl tert-butyl ether	0.0035 U	0.0025 U	0.0033 U
1,2,4-Trimethylbenzene	0.0035 U	0.00062 J	0.0037
1,3,5-Trimethylbenzene	0.0035 U	0.00033 J	0.0014 J
SVOCs			
Benzo(a)pyrene	0.52	1.6	1
Naphthalene	0.69	2.2	3.7
Metals			
Lead	25.6	100	272

GPR285-01	4.5-5(ft)
VOCs	
Benzene	**4 (C)**
1,2-Dichloroethane	0.11 U
Ethyl Benzene	7.4
Methyl tert-butyl ether	0.22 U
1,2,4-Trimethylbenzene	28
1,3,5-Trimethylbenzene	30
SVOCs	
Benzo(a)pyrene	2.3
Naphthalene	11
Metals	
Lead	255

GPR285-16	3-3.5(ft)
VOCs	
Benzene	0.00047 U
1,2-Dichloroethane	0.00094 U
Ethyl Benzene	0.00094 U
Methyl tert-butyl ether	0.0019 U
1,2,4-Trimethylbenzene	0.0019 U
1,3,5-Trimethylbenzene	0.0019 U
SVOCs	
Benzo(a)pyrene	0.12 J
Naphthalene	0.23
Metals	
Lead	22.8

GPR285-11	4.5-5(ft)
VOCs	
Benzene	0.0008 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0032 U
1,2,4-Trimethylbenzene	0.0032 U
1,3,5-Trimethylbenzene	0.0032 U
SVOCs	
Benzo(a)pyrene	1.9
Naphthalene	7.6
Metals	
Lead	113

B91-17	2-4(ft)
VOCs	
Benzene	0.18
1,2-Dichloroethane	--
Ethyl Benzene	0.097
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	1.1
Metals	
Lead	197

GPR285-17	3-3.5(ft)
VOCs	
Benzene	0.00083 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0033 U
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1
Naphthalene	4.5
Metals	
Lead	264

GPR285-14	0.5-1(ft)	5-5.5(ft)	6-6.5(ft)
VOCs			
Benzene	0.00041 J	0.0057	0.00093 U
1,2-Dichloroethane	0.0014 U	0.0016 U	0.0019 U
Ethyl Benzene	0.0014 U	0.0016 U	0.0019 U
Methyl tert-butyl ether	0.0029 U	0.0033 U	0.0037 U
1,2,4-Trimethylbenzene	0.0029 U	0.0033 U	0.00081 J
1,3,5-Trimethylbenzene	0.0029 U	0.0033 U	0.0037 U
SVOCs			
Benzo(a)pyrene	3.4	4.1	0.97
Naphthalene	2.5	2.5	2.8
Metals			
Lead	268	304	311

B91-16	2-4(ft)
VOCs	
Benzene	0.15
1,2-Dichloroethane	0.007 U
Ethyl Benzene	0.089 U
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	0.18 L
Naphthalene	--
Metals	
Lead	222

B91-16RE	2-4(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	0.45 L
Naphthalene	0.56 L
Metals	
Lead	--

GPR285-13	4.5-5(ft)
VOCs	
Benzene	**1.1 (C)**
1,2-Dichloroethane	0.21 U
Ethyl Benzene	23
Methyl tert-butyl ether	0.42 U
1,2,4-Trimethylbenzene	80
1,3,5-Trimethylbenzene	80
SVOCs	
Benzo(a)pyrene	4.9
Naphthalene	13
Metals	
Lead	129

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

GPR282-07	4-4.5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	493 (C)

Sampling Depth

Result

MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
-- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium-Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 30 60 90 120 ft

1 Inch = 30 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

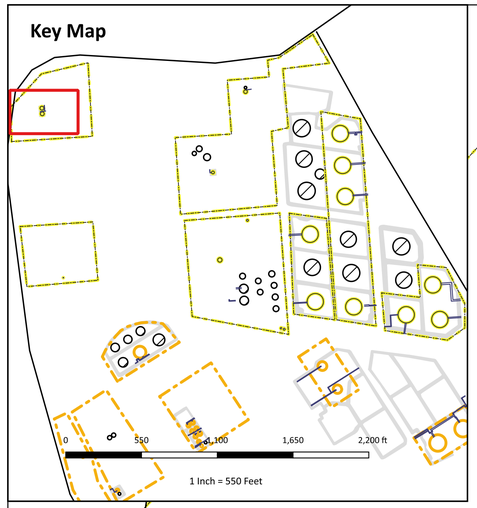
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 285)

FIGURE 10g

N:\GIS\Projects\P044.001_P028M-P053\GIS_Out2 and GPKG\Revised_AST\TG06\20250515\20250328_P044.001_BDH_AST_TG06_SO_Databases.ggz - Figure 10g - GPR285 Analytical Results - 2025-05-13T16:51:19.000 Created by: A.Spiers Checked by: K. Long



GPR1038-08	2.5-3(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	326

GPR1038-01	1.5-2(ft)
VOCs	
Benzene	0.0084
1,2-Dichloroethane	0.0013 U
Ethyl Benzene	0.01
Methyl tert-butyl ether	0.0027 U
1,2,4-Trimethylbenzene	0.078
1,3,5-Trimethylbenzene	0.016
SVOCs	
Benzo(a)pyrene	1
Naphthalene	0.55
Metals	
Lead	255

GPR1038-02	2.5-3(ft)
VOCs	
Benzene	0.00063 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0025 U
1,2,4-Trimethylbenzene	0.0016 J
1,3,5-Trimethylbenzene	0.00072 J
SVOCs	
Benzo(a)pyrene	0.72 J
Naphthalene	0.55
Metals	
Lead	**686 (C)**

GPR1038-06	0.5-1(ft)	2.5-3(ft)	4.5-5(ft)
VOCs			
Benzene	0.00049 U	0.00055 J	0.00033 J
1,2-Dichloroethane	0.00098 U	0.0012 U	0.0011 U
Ethyl Benzene	0.00098 U	0.0011 J	0.0011 U
Methyl tert-butyl ether	0.002 U	0.0024 U	0.0023 U
1,2,4-Trimethylbenzene	0.002 U	0.0046	0.0018 J
1,3,5-Trimethylbenzene	0.002 U	0.0011 J	0.00098 J
SVOCs			
Benzo(a)pyrene	1.2	1.4	1.5
Naphthalene	0.46	4.1	1.8
Metals			
Lead	83.1	**803 (C)**	431

GPR1038-12	2.5-3(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	**554 (C)**

BH-10-15	1.4-1.9(ft)
VOCs	
Benzene	0.004 J
1,2-Dichloroethane	0.001 U
Ethyl Benzene	0.001 U
Methyl tert-butyl ether	0.0006 U
1,2,4-Trimethylbenzene	0.001 U
1,3,5-Trimethylbenzene	0.001 U
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	0.31
Metals	
Lead	280

GPR1038-03	2.5-3(ft)
VOCs	
Benzene	0.0006 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0024 U
1,2,4-Trimethylbenzene	0.00059 J
1,3,5-Trimethylbenzene	0.00025 J
SVOCs	
Benzo(a)pyrene	0.25
Naphthalene	0.042 J
Metals	
Lead	232

GPR1038-09	2.5-3(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	**552 (C)**

GPR1038-05	3-3.5(ft)
VOCs	
Benzene	0.14
1,2-Dichloroethane	0.094 U
Ethyl Benzene	0.091 J
Methyl tert-butyl ether	0.19 U
1,2,4-Trimethylbenzene	0.11 J
1,3,5-Trimethylbenzene	0.19 U
SVOCs	
Benzo(a)pyrene	0.59 J
Naphthalene	0.83
Metals	
Lead	256

GPR1038-04	0.5-1(ft)	1.5-2(ft)	2-2.5(ft)
VOCs			
Benzene	0.035 J	0.04 J	0.0014
1,2-Dichloroethane	0.074 U	0.082 U	0.0012 U
Ethyl Benzene	0.46	1	0.005
Methyl tert-butyl ether	0.15 U	0.16 U	0.0025 U
1,2,4-Trimethylbenzene	30	24	0.078
1,3,5-Trimethylbenzene	17	17	0.035
SVOCs			
Benzo(a)pyrene	0.81 J	7.8 U	0.9
Naphthalene	**30 (C)**	**150 (AC)**	3
Metals			
Lead	**506 (C)**	427	441

GPR1038-10	4.5-5(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	368

GPR1038-11	4.5-5(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	276

GPR1038-07	0.5-1(ft)	1.5-2(ft)	4.5-5(ft)
VOCs			
Benzene	0.0005 U	0.028	0.00057 U
1,2-Dichloroethane	0.001 U	0.055 U	0.0011 U
Ethyl Benzene	0.001 U	0.012 J	0.0011 U
Methyl tert-butyl ether	0.002 U	0.11 U	0.0023 U
1,2,4-Trimethylbenzene	0.002 U	0.038 J	0.00067 J
1,3,5-Trimethylbenzene	0.002 U	0.11 U	0.00029 J
SVOCs			
Benzo(a)pyrene	3	1.2	1.4
Naphthalene	0.11	0.36	4.4
Metals			
Lead	133	232	**609 (C)**

AOI7 BH-12-55
137-02
C-170
BNA-9
BH-10-15
GPR1038-08
GPR1038-06
GPR1038-09
C-62
GPR1039-01
GPR1039-02
GPR1039-03
GPR1039-05
GPR1039-04
GPR1038-01
GPR1038-02
GPR1038-12
GPR1038-04
GPR1038-03
TG06-MW-05
GPR1038-05
GPR1038-07
GPR1038-10
GPR1038-11
BNA-8
BH-10-14
137-04

GP R 1039 (#6 Fuel Oil)

GP R 1038 (Alky Slurry)

Legend
- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

GPR282-07	4.4-5(ft)
VOCs	
Benzene	0.00082 U
1,2-Dichloroethane	0.0016 U
Ethyl Benzene	0.0016 U
Methyl tert-butyl ether	0.0009 J
1,2,4-Trimethylbenzene	0.0033 U
1,3,5-Trimethylbenzene	0.0033 U
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	3.2
Metals	
Lead	**493 (C)**

Sampling Depth
Result
MSC Exceeded

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS < 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 15 30 45 60 ft
1 Inch = 15 Feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

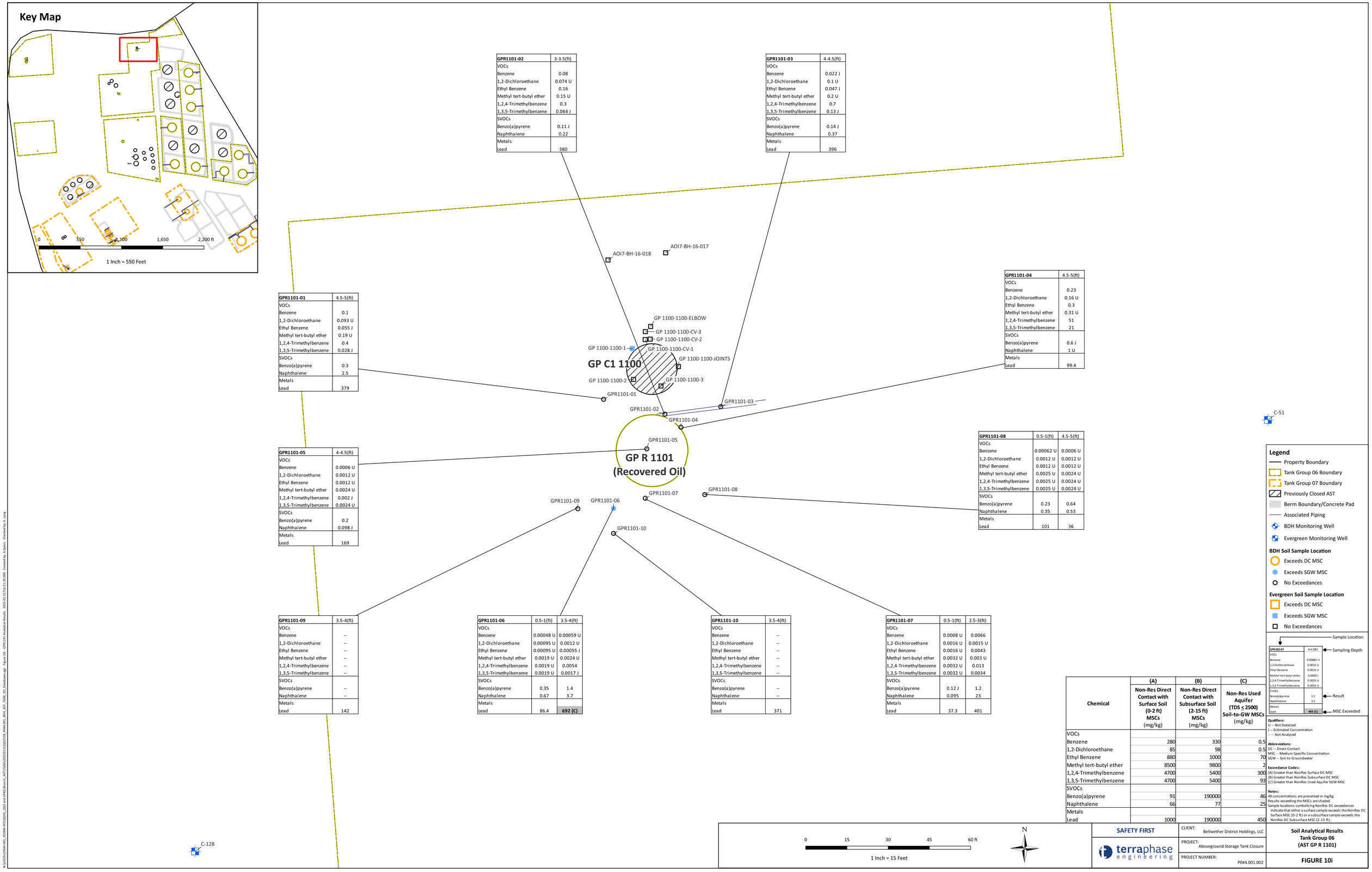
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 1038)

FIGURE 10h

N:\01\P\P044.001_PEMA-PES\GIS_QGIS and GPKG\Bench_AST\TG06\20250313\20250218_P044.001_BDH_AST_TG06_SO_Databases.ggs - Figure 10h - GPR1038 Analytical Results_ 2025-01-13T16:51:39.000 Created by: A.Spiers Checked by: K. Long

Key Map



GPR1101-02	3-3.5(ft)
VOCs	
Benzene	0.08
1,2-Dichloroethane	0.074 U
Ethyl Benzene	0.16
Methyl tert-butyl ether	0.15 U
1,2,4-Trimethylbenzene	0.3
1,3,5-Trimethylbenzene	0.064 J
SVOCs	
Benzo(a)pyrene	0.11 J
Naphthalene	0.22
Metals	
Lead	380

GPR1101-03	4-4.5(ft)
VOCs	
Benzene	0.022 J
1,2-Dichloroethane	0.1 U
Ethyl Benzene	0.047 J
Methyl tert-butyl ether	0.2 U
1,2,4-Trimethylbenzene	0.7
1,3,5-Trimethylbenzene	0.13 J
SVOCs	
Benzo(a)pyrene	0.14 J
Naphthalene	0.37
Metals	
Lead	396

GPR1101-04	4.5-5(ft)
VOCs	
Benzene	0.23
1,2-Dichloroethane	0.16 U
Ethyl Benzene	0.3
Methyl tert-butyl ether	0.31 U
1,2,4-Trimethylbenzene	51
1,3,5-Trimethylbenzene	21
SVOCs	
Benzo(a)pyrene	0.6 J
Naphthalene	1 U
Metals	
Lead	99.4

GPR1101-01	4.5-5(ft)
VOCs	
Benzene	0.1
1,2-Dichloroethane	0.093 U
Ethyl Benzene	0.055 J
Methyl tert-butyl ether	0.19 U
1,2,4-Trimethylbenzene	0.4
1,3,5-Trimethylbenzene	0.028 J
SVOCs	
Benzo(a)pyrene	0.3
Naphthalene	2.5
Metals	
Lead	379

GPR1101-08	0.5-1(ft)	4.5-5(ft)
VOCs		
Benzene	0.00062 U	0.0006 U
1,2-Dichloroethane	0.0012 U	0.0012 U
Ethyl Benzene	0.0012 U	0.0012 U
Methyl tert-butyl ether	0.0025 U	0.0024 U
1,2,4-Trimethylbenzene	0.0025 U	0.0024 U
1,3,5-Trimethylbenzene	0.0025 U	0.0024 U
SVOCs		
Benzo(a)pyrene	0.23	0.64
Naphthalene	0.35	0.53
Metals		
Lead	101	36

GPR1101-05	4-4.5(ft)
VOCs	
Benzene	0.0006 U
1,2-Dichloroethane	0.0012 U
Ethyl Benzene	0.0012 U
Methyl tert-butyl ether	0.0024 U
1,2,4-Trimethylbenzene	0.002 J
1,3,5-Trimethylbenzene	0.0024 U
SVOCs	
Benzo(a)pyrene	0.2
Naphthalene	0.098 J
Metals	
Lead	169

GPR1101-09	3.5-4(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	142

GPR1101-06	0.5-1(ft)	3.5-4(ft)
VOCs		
Benzene	0.00048 U	0.00059 U
1,2-Dichloroethane	0.00095 U	0.0012 U
Ethyl Benzene	0.00095 U	0.00055 J
Methyl tert-butyl ether	0.0019 U	0.0024 U
1,2,4-Trimethylbenzene	0.0019 U	0.0054
1,3,5-Trimethylbenzene	0.0019 U	0.0017 J
SVOCs		
Benzo(a)pyrene	0.35	1.4
Naphthalene	0.67	3.7
Metals		
Lead	86.4	**692 (C)**

GPR1101-10	3.5-4(ft)
VOCs	
Benzene	--
1,2-Dichloroethane	--
Ethyl Benzene	--
Methyl tert-butyl ether	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	371

GPR1101-07	0.5-1(ft)	2.5-3(ft)
VOCs		
Benzene	0.0008 U	0.0066
1,2-Dichloroethane	0.0016 U	0.0015 U
Ethyl Benzene	0.0016 U	0.0043
Methyl tert-butyl ether	0.0032 U	0.003 U
1,2,4-Trimethylbenzene	0.0032 U	0.013
1,3,5-Trimethylbenzene	0.0032 U	0.0034
SVOCs		
Benzo(a)pyrene	0.12 J	1.2
Naphthalene	0.095	23
Metals		
Lead	37.3	401

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
1,2-Dichloroethane	85	98	0.5
Ethyl Benzene	880	1000	70
Methyl tert-butyl ether	8500	9800	2
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 15 30 45 60 ft

1 Inch = 15 Feet

N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC

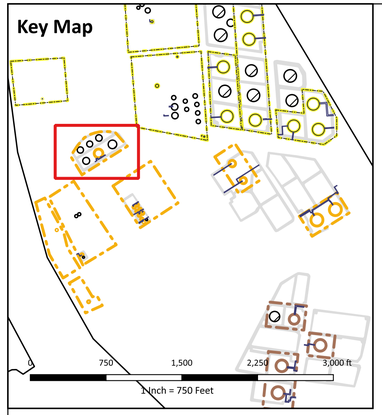
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 06
(AST GP R 1101)

FIGURE 10i

K:\015\P044.001_PEBM-PRJ\GIS_GDE and GPR\Branch_AST\TG06\20250313\20250328_P044.001_BDH_AST_TG06_SO_Databases.ags - Figure 10i - GPR1101 Analytical Results - 2025-01-13T16:51:39.000 - Created by: A.Spiers - Checked by: K. Long



GPR494-01	4.5-5(ft)
VOCs	
Benzene	0.025 U
Cumene	0.049 U
Ethyl Benzene	0.022 J
Toluene	0.049 U
1,2,4-Trimethylbenzene	0.22
1,3,5-Trimethylbenzene	0.06 J
SVOCs	
Benzo(a)pyrene	7.7
Naphthalene	1.3 J
Metals	
Lead	**517 (C)**

GPR494-02	1.5-2(ft)
VOCs	
Benzene	0.037
Cumene	0.63
Ethyl Benzene	0.064 J
Toluene	0.047 J
1,2,4-Trimethylbenzene	0.061 J
1,3,5-Trimethylbenzene	0.14 U
SVOCs	
Benzo(a)pyrene	18
Naphthalene	1.4 J
Metals	
Lead	90.3

GPR494-03	4-4.5(ft)
VOCs	
Benzene	0.0004 J
Cumene	0.034
Ethyl Benzene	0.0012
Toluene	0.00082 J
1,2,4-Trimethylbenzene	0.0017 J
1,3,5-Trimethylbenzene	0.0004 J
SVOCs	
Benzo(a)pyrene	7.4
Naphthalene	0.91 U
Metals	
Lead	12.9

GPR494-04	2.5-3(ft)
VOCs	
Benzene	0.00036 J
Cumene	0.0072
Ethyl Benzene	0.001 J
Toluene	0.0011 J
1,2,4-Trimethylbenzene	0.001 J
1,3,5-Trimethylbenzene	0.0074
SVOCs	
Benzo(a)pyrene	7.4
Naphthalene	0.36 J
Metals	
Lead	238

GPR494-06	4.5-5(ft)
VOCs	
Benzene	0.00059
Cumene	0.0091
Ethyl Benzene	0.00067 J
Toluene	0.0012
1,2,4-Trimethylbenzene	0.002 J
1,3,5-Trimethylbenzene	0.0022 U
SVOCs	
Benzo(a)pyrene	2.1
Naphthalene	0.42 J
Metals	
Lead	78.1

GPR494-08	0-0.5(ft)	3-3.5(ft)
VOCs		
Benzene	0.0088	0.016
Cumene	0.00086 U	0.0029
Ethyl Benzene	0.00086 U	0.0036
Toluene	0.00086 U	0.0057
1,2,4-Trimethylbenzene	0.0017 U	0.012
1,3,5-Trimethylbenzene	0.0017 U	0.0039
SVOCs		
Benzo(a)pyrene	0.62	**54 (C)**
Naphthalene	0.11 U	4.8 J
Metals		
Lead	--	114

GPR494-05	4.5-5(ft)
VOCs	
Benzene	0.068 U
Cumene	2.1
Ethyl Benzene	0.046 J
Toluene	0.089 J
1,2,4-Trimethylbenzene	0.15 J
1,3,5-Trimethylbenzene	0.27 U
SVOCs	
Benzo(a)pyrene	8.7
Naphthalene	0.94 J
Metals	
Lead	32

GPR494-07	4.5-5(ft)
VOCs	
Benzene	0.0005 J
Cumene	0.14
Ethyl Benzene	0.0028
Toluene	0.0043
1,2,4-Trimethylbenzene	0.018
1,3,5-Trimethylbenzene	0.0025
SVOCs	
Benzo(a)pyrene	2.7
Naphthalene	0.98 U
Metals	
Lead	19.3

GPR494-09	3-3.5(ft)
VOCs	
Benzene	0.00069 U
Cumene	0.0014 U
Ethyl Benzene	0.0014 U
Toluene	0.0014 U
1,2,4-Trimethylbenzene	0.0028 U
1,3,5-Trimethylbenzene	0.0028 U
SVOCs	
Benzo(a)pyrene	1.1
Naphthalene	0.059 J
Metals	
Lead	70.9

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Cumene	10000	10000	2500
Ethyl Benzene	880	1000	70
Toluene	10000	10000	100
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

GP 496
GP 497
GP 493
GP 498
GP 495
GP R 494
(Main Frac Bottoms)
B-45
B-44
AOI6 BH-12-106
AOI6 BH-12-107
TG07-MW-01
GPR494-01
GPR494-02
GPR494-03
GPR494-04
GPR494-05
GPR494-06
GPR494-07
GPR494-08
GPR494-09

Legend
- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
Sampling Depth
Result
MSC Exceeded

GPR494-01	4.5-5(ft)
VOCs	
Benzene	0.025 U
Cumene	0.049 U
Ethyl Benzene	0.022 J
Toluene	0.049 U
1,2,4-Trimethylbenzene	0.22
1,3,5-Trimethylbenzene	0.06 J
SVOCs	
Benzo(a)pyrene	7.7
Naphthalene	1.3 J
Metals	
Lead	517 (C)

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 25 50 75 100 ft
1 Inch = 25 Feet
N

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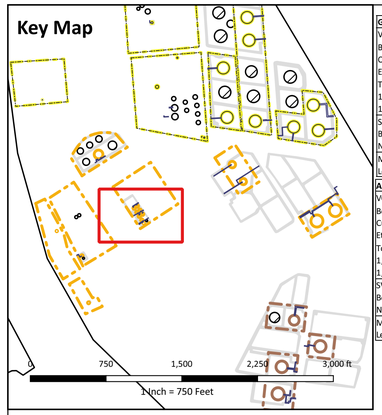
CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 07
(AST GP R 494)

FIGURE 11a

N:\GIS\Zip\P044.001_PEMA HFSI\GIS_QGZ and GPKG\Arcmap_AST\TG07\20250813\20250728_P044.001_BDH_AST_TG07_SD_Shutdown.mpl Figure 11a - GP R 494 Analytical Results 2025-10-31T14:51:19.000 Created by: A.Spiers Checked by: initial

Key Map



GPR790-05	4-4.5(ft)	4.5-5(ft)	4.5-5(ft)
VOCs			
Benzene	**2300 (BC)**	**3000 (BC)**	**1700 (BC)**
Cumene	240	--	99
Ethyl Benzene	25	--	12
Toluene	**350 (C)**	--	**230 (C)**
1,2,4-Trimethylbenzene	65	--	27
1,3,5-Trimethylbenzene	33	--	14
SVOCs			
Benzo(a)pyrene	0.77 U	--	0.77 U
Naphthalene	7.5	--	5
Metals			
Lead	--	--	--

GPR790-02	4.5-5(ft)
VOCs	
Benzene	**130 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR791-08	4-4.5(ft)
VOCs	
Benzene	**7.1 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR791-02	3.5-4(ft)
VOCs	
Benzene	**4 J (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-036	1.25-1.75(ft)	2-2.25(ft)
VOCs		
Benzene	**0.55 J (C)**	**0.7 J (C)**
Cumene	59	180
Ethyl Benzene	4.5 U	4.2 U
Toluene	4.5 U	4.2 U
1,2,4-Trimethylbenzene	4.5 U	4.2 U
1,3,5-Trimethylbenzene	4.5 U	4.2 U
SVOCs		
Benzo(a)pyrene	0.3	0.088
Naphthalene	0.099	0.018 J
Metals		
Lead	60.8	18.9

GPR791-01	4.5-5(ft)
VOCs	
Benzene	**1200 (BC)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR791-09	0-0.5(ft)	2-2.5(ft)
VOCs		
Benzene	0.0046	0.0035
Cumene	0.14	0.0043
Ethyl Benzene	0.00061 J	0.00099 U
Toluene	0.0045	0.00064 J
1,2,4-Trimethylbenzene	0.00067 J	0.002 U
1,3,5-Trimethylbenzene	0.00028 J	0.002 U
SVOCs		
Benzo(a)pyrene	0.51	0.15 U
Naphthalene	0.12	0.037 U
Metals		
Lead	--	--

GPR791-04	3-3.5(ft)	4-4.5(ft)	4.5-5(ft)
VOCs			
Benzene	**1300 (BC)**	**170 (C)**	**140 (C)**
Cumene	--	**3400 (C)**	1900
Ethyl Benzene	--	2.7	1 J
Toluene	--	3.6	3.8 J
1,2,4-Trimethylbenzene	--	4.9	2.8 J
1,3,5-Trimethylbenzene	--	0.28 J	12 U
SVOCs			
Benzo(a)pyrene	--	0.18	0.73 U
Naphthalene	--	5.4	0.37
Metals			
Lead	--	--	--

GPR791-05	3-3.5(ft)
VOCs	
Benzene	**9.8 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR792-01	4-4.5(ft)
VOCs	
Benzene	--
Cumene	2400
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR793-02	4-4.5(ft)
VOCs	
Benzene	--
Cumene	**11000 (BC)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-035	1.5-2(ft)	2-2.25(ft)
VOCs		
Benzene	0.001 J	0.002 J
Cumene	0.021	0.083
Ethyl Benzene	0.004 U	0.004 U
Toluene	0.004 U	0.004 U
1,2,4-Trimethylbenzene	0.004 U	0.004 U
1,3,5-Trimethylbenzene	0.004 U	0.004 U
SVOCs		
Benzo(a)pyrene	0.009 J	0.02
Naphthalene	0.019 U	0.019 U
Metals		
Lead	10	10.9

GPR790-03	4.5-5(ft)
VOCs	
Benzene	**2.8 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR790-04	3-3.5(ft)
VOCs	
Benzene	0.2 J
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR790-01	4.5-5(ft)
VOCs	
Benzene	**520 (BC)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR792-02	4.5-5(ft)
VOCs	
Benzene	-- / --
Cumene	**4700 (C) / 4700 (C)**
Ethyl Benzene	-- / --
Toluene	-- / --
1,2,4-Trimethylbenzene	-- / --
1,3,5-Trimethylbenzene	-- / --
SVOCs	
Benzo(a)pyrene	-- / --
Naphthalene	-- / --
Metals	
Lead	-- / --

GPR792-03	1.5-2(ft)	2-2.5(ft)	4.5-5(ft)
VOCs			
Benzene	0.32	0.46	--
Cumene	160	160	**12000 (BC)**
Ethyl Benzene	0.06 J	0.052 J	--
Toluene	0.28 U	0.25 U	--
1,2,4-Trimethylbenzene	0.12 J	0.14 J	--
1,3,5-Trimethylbenzene	0.067 J	0.074 J	--
SVOCs			
Benzo(a)pyrene	0.75 U	2.8 U	--
Naphthalene	0.19 U	0.71 U	--
Metals			
Lead	--	--	--

GPR791-06	3-3.5(ft)
VOCs	
Benzene	**380 (BC)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR791-07	3-3.5(ft)
VOCs	
Benzene	**13 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR793-05	4.5-5(ft)
VOCs	
Benzene	--
Cumene	1900
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR791-03	4-4.5(ft)
VOCs	
Benzene	**160 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR793-01	4-4.5(ft)
VOCs	
Benzene	--
Cumene	**5500 (C)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-19-003	0-2(ft)	2-2.5(ft)
VOCs		
Benzene	**13.7 (C)**	**18.1 (C)**
Cumene	--	--
Ethyl Benzene	--	--
Toluene	--	--
1,2,4-Trimethylbenzene	--	--
1,3,5-Trimethylbenzene	--	--
SVOCs		
Benzo(a)pyrene	--	--
Naphthalene	--	--
Metals		
Lead	--	--

AOI6-BH-16-037	1-1.75(ft)	1.75-2.25(ft)
VOCs		
Benzene	**710 (AC)**	**850 (AC)**
Cumene	**6500 (C)**	**8500 (C)**
Ethyl Benzene	94 U	97 U
Toluene	**840 (C)**	**1200 (C)**
1,2,4-Trimethylbenzene	94 U	97 U
1,3,5-Trimethylbenzene	94 U	97 U
SVOCs		
Benzo(a)pyrene	0.16	0.074
Naphthalene	1.3	1.4
Metals		
Lead	100	105

AOI6-BH-12-149	1-1.5(ft)	2.5-3(ft)
VOCs		
Benzene	0.0506 J	**517 (BC)**
Cumene	0.147 J	74.7
Ethyl Benzene	0.07 U	1.4 U
Toluene	0.0223 J	21.2
1,2,4-Trimethylbenzene	0.35 U	7 U
1,3,5-Trimethylbenzene	0.35 U	7 U
SVOCs		
Benzo(a)pyrene	0.0576	0.452
Naphthalene	0.35 U	7 U
Metals		
Lead	27.9	127

GPR792-06	4.5-5(ft)
VOCs	
Benzene	--
Cumene	**4600 (C)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-032	1-2(ft)	2-2.5(ft)
VOCs		
Benzene	0.12 J	**3.7 (C)**
Cumene	1.7	110
Ethyl Benzene	0.051 J	3.6
Toluene	0.091 J	45
1,2,4-Trimethylbenzene	0.22 U	0.7 J
1,3,5-Trimethylbenzene	0.22 U	0.37 J
SVOCs		
Benzo(a)pyrene	0.036	0.013 J
Naphthalene	0.018 U	0.029
Metals		
Lead	10.3	10.6

GPR790-06	4.5-5(ft)
VOCs	
Benzene	**4.6 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-034	1.5-1.75(ft)	2-2.25(ft)
VOCs		
Benzene	**44 (C)**	**96 (C)**
Cumene	230	360
Ethyl Benzene	5 U	1.2 J
Toluene	38	81
1,2,4-Trimethylbenzene	5 U	4.7 U
1,3,5-Trimethylbenzene	5 U	4.7 U
SVOCs		
Benzo(a)pyrene	0.092	0.039 J
Naphthalene	0.07	0.16
Metals		
Lead	14	15.3

GPR790-07	4.5-5(ft)
VOCs	
Benzene	**34 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-038	1.5-1.75(ft)
VOCs	
Benzene	**8.8 (C)**
Cumene	14
Ethyl Benzene	4.8 U
Toluene	4.8 U
1,2,4-Trimethylbenzene	4.8 U
1,3,5-Trimethylbenzene	4.8 U
SVOCs	
Benzo(a)pyrene	0.22
Naphthalene	0.093 J
Metals	
Lead	33.1

GPR792-04	4.5-5(ft)
VOCs	
Benzene	--
Cumene	**5000 (C)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR790-08	0-0.5(ft)
VOCs	
Benzene	0.00076
Cumene	0.0063
Ethyl Benzene	0.00019 J
Toluene	0.00074 J
1,2,4-Trimethylbenzene	0.00039 J
1,3,5-Trimethylbenzene	0.002 U
SVOCs	
Benzo(a)pyrene	0.47
Naphthalene	0.036 J
Metals	
Lead	--

AOI6 BH-12-124	3-3.5(ft)
VOCs	
Benzene	**1380 (BC)**
Cumene	2110
Ethyl Benzene	5.87
Toluene	**1640 (C)**
1,2,4-Trimethylbenzene	3.46
1,3,5-Trimethylbenzene	1.21 J
SVOCs	
Benzo(a)pyrene	0.0179 J
Naphthalene	0.479 J
Metals	
Lead	5.5

AOI6-BH-16-025	1.5-1.9(ft)	1.9-2.2(ft)
VOCs		
Benzene	**2.7 (C) / 2.6 (C)**	**1400 J (AC)**
Cumene	2.9 / 2.6	2200 J
Ethyl Benzene	0.12 J / 0.11 J	61 J
Toluene	0.9 / 0.75	**640 J (C)**
1,2,4-Trimethylbenzene	0.095 J / 0.096 J	50 J
1,3,5-Trimethylbenzene	0.045 J / 0.21 U	18 J
SVOCs		
Benzo(a)pyrene	2.3 / 2.7	0.69
Naphthalene	0.46 / 0.48	2
Metals		
Lead	10.3 / 10.2	64.3

GPR793-03	2.5-3(ft)	3-3.5(ft)	4.5-5(ft)
VOCs			
Benzene	2.5 U	2.8 U	--
Cumene	1500	2200	**15000 (BC)**
Ethyl Benzene	5 U	5.6 U	--
Toluene	5 U	5.6 U	--
1,2,4-Trimethylbenzene	10 U	11 U	--
1,3,5-Trimethylbenzene	10 U	11 U	--
SVOCs			
Benzo(a)pyrene	0.72 U	2.9 U	--
Naphthalene	0.18 U	0.73 U	--
Metals			
Lead	--	--	--

GPR792-07	4.5-5(ft)
VOCs	
Benzene	--
Cumene	1400
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR794-04	4.5-5(ft)
VOCs	
Benzene	**7800 (BC)**
Cumene	**12000 (BC)**
Ethyl Benzene	**120 (C)**
Toluene	**6100 (C)**
1,2,4-Trimethylbenzene	79
1,3,5-Trimethylbenzene	35
SVOCs	
Benzo(a)pyrene	0.48 J
Naphthalene	3.1
Metals	
Lead	63.8

AOI6-BH-19-005	0-2(ft)	2-2.5(ft)
VOCs		
Benzene	**7.02 (C)**	0.223
Cumene	--	--
Ethyl Benzene	--	--
Toluene	--	--
1,2,4-Trimethylbenzene	--	--
1,3,5-Trimethylbenzene	--	--
SVOCs		
Benzo(a)pyrene	--	--
Naphthalene	--	--
Metals		
Lead	--	--

AOI6 BH-12-129	1.5-2(ft)	2.5-3(ft)
VOCs		
Benzene	**91.6 (C)**	**1850 (BC)**
Cumene	311	**6600 (C)**
Ethyl Benzene	0.837	12.6
Toluene	**116 (C)**	**2070 (C)**
1,2,4-Trimethylbenzene	0.705	9.43
1,3,5-Trimethylbenzene	0.257	3.38
SVOCs		
Benzo(a)pyrene	0.0627	0.121
Naphthalene	0.0543 J	0.898 J
Metals		
Lead	48	107

GPR793-04	4.5-5(ft)
VOCs	
Benzene	--
Cumene	**14000 (BC)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR793-06	3.5-5(ft)
VOCs	
Benzene	--
Cumene	1800
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

BH-26-06	0.5-1(ft)
VOCs	
Benzene	**180 (C)**
Cumene	800
Ethyl Benzene	2.7
Toluene	**260 (C)**
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	0.18 U
Naphthalene	0.18 U
Metals	
Lead	32.6

GPR794-09	1.5-2(ft)	2-2.5(ft)
VOCs		
Benzene	**1 (C)**	**2.6 (C) / 1.1 (C)**
Cumene	18	20 / 14
Ethyl Benzene	0.11	0.32 / 0.21
Toluene	0.42	1.7 / 0.83
1,2,4-Trimethylbenzene	0.098 U	0.047 J / 0.042 J
1,3,5-Trimethylbenzene	0.098 U	0.016 J / 0.017 J
SVOCs		
Benzo(a)pyrene	0.19	0.087 J / 0.058 J
Naphthalene	0.031 J	0.27 / 0.2
Metals		
Lead	--	-- / --

GPR792-05	4.5-5(ft)
VOCs	
Benzene	--
Cumene	**8900 (C)**
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	1.5 U
Naphthalene	6.3
Metals	
Lead	429

GPR794-05	4.5-5(ft)
VOCs	
Benzene	**2600 (BC)**
Cumene	2500
Ethyl Benzene	31
Toluene	**1800 (C)**
1,2,4-Trimethylbenzene	7.7
1,3,5-Trimethylbenzene	3.5 J
SVOCs	
Benzo(a)pyrene	0.16 U
Naphthalene	1.7
Metals	
Lead	23.6

GPR794-06	4.5-5(ft)
VOCs	
Benzene	**2000 (BC)**
Cumene	**4800 (C)**
Ethyl Benzene	**110 (C)**
Toluene	**4300 (C)**
1,2,4-Trimethylbenzene	48
1,3,5-Trimethylbenzene	23 J
SVOCs	
Benzo(a)pyrene	1.5 U
Naphthalene	6.3
Metals	
Lead	429

GPR794-02	4.5-5(ft)
VOCs	
Benzene	**2.5 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR794-01	4.5-5(ft)
VOCs	
Benzene	**2200 (BC)**
Cumene	**4000 (C)**
Ethyl Benzene	**74 (C)**
Toluene	**3400 (C)**
1,2,4-Trimethylbenzene	32
1,3,5-Trimethylbenzene	16
SVOCs	
Benzo(a)pyrene	1.5 U
Naphthalene	3.5
Metals	
Lead	408

B-150	B-172 3-3.5(ft)
VOCs	
Benzene	**610 (BC)**
Cumene	270
Ethyl Benzene	14
Toluene	**300 (C)**
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	4.8
Metals	
Lead	--

GPR794-10	1.5-2(ft)
VOCs	
Benzene	0.35
Cumene	42
Ethyl Benzene	0.02 J
Toluene	0.27
1,2,4-Trimethylbenzene	0.19 U
1,3,5-Trimethylbenzene	0.19 U
SVOCs	
Benzo(a)pyrene	0.047 J
Naphthalene	0.3
Metals	
Lead	--

GP 797-HA-2	1-1.5(ft)
VOCs	
Benzene	**28 D (C)**
Cumene	17 D
Ethyl Benzene	0.85
Toluene	11 D
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.26 U
Metals	
Lead	--

GP 797-HA-4	1-1.5(ft)
VOCs	
Benzene	**190 D (C)**
Cumene	950 D
Ethyl Benzene	55 D
Toluene	**660 D (C)**
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.29
Metals	
Lead	--

AOI6 BH-12-128	3-3.5(ft)
VOCs	
Benzene	**535 (BC)**
Cumene	919
Ethyl Benzene	57.8
Toluene	**1050 (C)**
1,2,4-Trimethylbenzene	6.32
1,3,5-Trimethylbenzene	2.92
SVOCs	
Benzo(a)pyrene	0.035 U
Naphthalene	0.154 J
Metals	
Lead	6.5

AOI6 BH-12-126	2.5-3(ft)
VOCs	
Benzene	**87.2 (C)**
Cumene	678
Ethyl Benzene	14.6
Toluene	**197 (C)**
1,2,4-Trimethylbenzene	4.62
1,3,5-Trimethylbenzene	2.08
SVOCs	
Benzo(a)pyrene	0.0491 J
Naphthalene	0.304 J
Metals	
Lead	8.7

AOI6 BH-12-127	2.5-3(ft)
VOCs	
Benzene	**149 (C)**
Cumene	374
Ethyl Benzene	18.7
Toluene	**339 (C)**
1,2,4-Trimethylbenzene	3.04
1,3,5-Trimethylbenzene	1.41
SVOCs	
Benzo(a)pyrene	0.0138 J
Naphthalene	0.103 J
Metals	
Lead	13.8

GP 797-HA-3	1-1.5(ft)	1.5-2(ft)
VOCs		
Benzene	**310 D (AC)**	**170 D (C)**
Cumene	1000 D	230 D
Ethyl Benzene	37 J,D	8.5
Toluene	**920 D (C)**	**300 D (C)**
1,2,4-Trimethylbenzene	--	--
1,3,5-Trimethylbenzene	--	--
SVOCs		
Benzo(a)pyrene	--	--
Naphthalene	0.41	0.3
Metals		
Lead	--	--

GPR794-08	4-4.5(ft)	4.5-5(ft)	4.5-5(ft)
VOCs			
Benzene	**2500 (BC)**	**12000 (BC)**	**3700 (BC)**
Cumene	750	**7600 (C)**	1600
Ethyl Benzene	48	**120 (C)**	**93 (C)**
Toluene	**240 (C)**	**6200 (C)**	**540 (C)**
1,2,4-Trimethylbenzene	140	35	**330 (C)**
1,3,5-Trimethylbenzene	57	15	**140 (C)**
SVOCs			
Benzo(a)pyrene	1.5 U	1.6 U	1.5 U
Naphthalene	**36 (C)**	8.7	**52 (C)**
Metals			
Lead	--	132	--

GPR794-03	3-3.5(ft)
VOCs	
Benzene	0.41
Cumene	0.38
Ethyl Benzene	0.02
Toluene	0.21
1,2,4-Trimethylbenzene	0.004
1,3,5-Trimethylbenzene	0.0024
SVOCs	
Benzo(a)pyrene	0.049 J
Naphthalene	0.18 U
Metals	
Lead	24.2

GPR794-07	4.5-5(ft)
VOCs	
Benzene	**130 (C)**
Cumene	330
Ethyl Benzene	1.5
Toluene	8.7
1,2,4-Trimethylbenzene	0.81 J
1,3,5-Trimethylbenzene	0.2 J
SVOCs	
Benzo(a)pyrene	0.15 U
Naphthalene	0.054 J
Metals	
Lead	3.73

AOI6-BH-16-030	1.5-2(ft)	2.5-2.75(ft)
VOCs		
Benzene	**9.4 (C)**	**130 (C)**
Cumene	18	710
Ethyl Benzene	4.4 U	4.3 U
Toluene	4.4 U	20
1,2,4-Trimethylbenzene	4.4 U	4.3 U
1,3,5-Trimethylbenzene	4.4 U	4.3 U
SVOCs		
Benzo(a)pyrene	0.12	0.079
Naphthalene	0.024 J	2.4
Metals		
Lead	66	34.3

GP 797-HA-1	1-1.5(ft)
VOCs	
Benzene	**920 D (AC)**
Cumene	1600 D
Ethyl Benzene	**80 J,D (C)**
Toluene	**1800 D (C)**
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	0.65
Metals	
Lead	--

AOI6 BH-12-125	2.5-3(ft)
VOCs	
Benzene	2.5 U
Cumene	64.2
Ethyl Benzene	2.5 U
Toluene	2.5 U
1,2,4-Trimethylbenzene	12 U
1,3,5-Trimethylbenzene	12 U
SVOCs	
Benzo(a)pyrene	0.035 U
Naphthalene	12 U
Metals	
Lead	11.4

Chemical	(A) Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	(B) Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	(C) Non-Res Used Aquifer (TDS < 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Cumene	10000	10000	2500
Ethyl Benzene	880	1000	70
Toluene	10000	10000	100
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
- -- Not Analyzed
D -- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

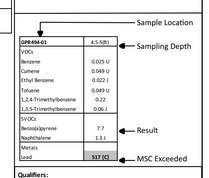
Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

Legend
- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances



SAFETY FIRST

terraphase engineering

CLIENT: Bellwether District Holdings, LLC

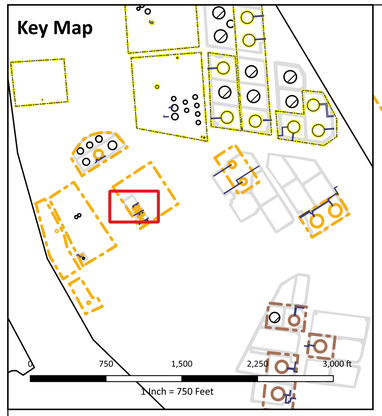
PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 07
(ASTs GP R 790, GP R 791, GP R 792, GP R 793, and GP R 794)

FIGURE 11b

P:\GIS\P044.001_PSEM\MXD\Soils_QGE and GPR\Branch_AST\SOP\20250813\250823_R044.001_BDH_AST_SOP_02_Sandstone.mpr Figure 11b - GP R 790, 791, 792, 793, 794 Analytical Results_2025-05-13T16:51:19.000 Created by: M.Cieslik Checked by: K.Long



GPR798-02	4.5-5(ft)
VOCs	
Benzene	**6.2 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR798-01	4.5-5(ft)
VOCs	
Benzene	**3.4 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR799-03	3-3.5(ft)	3.5-4(ft)	4-4.5(ft)
VOCs			
Benzene	**2.6 (C)**	**1.2 (C)**	**16 (C)**
Cumene	0.78	8.2	--
Ethyl Benzene	0.025 J	0.13	--
Toluene	0.089	0.44	--
1,2,4-Trimethylbenzene	0.043 J	0.8	--
1,3,5-Trimethylbenzene	0.018 J	0.63	--
SVOCs			
Benzo(a)pyrene	1.1	0.58 J	--
Naphthalene	0.36	2.2	--
Metals			
Lead	--	--	--

GPR799-04	4-4.5(ft)
VOCs	
Benzene	**22 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR799-01	4-4.5(ft)
VOCs	
Benzene	**2.2 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR799-08	1-1.5(ft)	3-3.5(ft)
VOCs		
Benzene	0.2	**0.77 (C)**
Cumene	0.0044	700
Ethyl Benzene	0.00094 U	0.13 J
Toluene	0.0048	0.8 U
1,2,4-Trimethylbenzene	0.0019 U	1.6 U
1,3,5-Trimethylbenzene	0.0019 U	1.6 U
SVOCs		
Benzo(a)pyrene	0.15 U	0.83
Naphthalene	0.032 J	1.6
Metals		
Lead	--	--

GPR799-02	4-4.5(ft)
VOCs	
Benzene	**1.6 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-026	0.4-1.3(ft)
VOCs	
Benzene	**7.6 (C)**
Cumene	1.8
Ethyl Benzene	0.082 J
Toluene	0.22 U
1,2,4-Trimethylbenzene	0.22 U
1,3,5-Trimethylbenzene	0.22 U
SVOCs	
Benzo(a)pyrene	1.3
Naphthalene	1.1
Metals	
Lead	61.8

GPR799-05	4-4.5(ft)
VOCs	
Benzene	**2.7 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR799-06	4.5-5(ft)
VOCs	
Benzene	**1.3 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-027	1.75-2(ft)	2.5-2.75(ft)
VOCs		
Benzene	0.005 U	**2.5 J (C)**
Cumene	0.005 U	360
Ethyl Benzene	0.005 U	5.3 U
Toluene	0.005 U	3.9 J
1,2,4-Trimethylbenzene	0.005 U	10
1,3,5-Trimethylbenzene	0.005 U	9.3
SVOCs		
Benzo(a)pyrene	0.01 J	1.7
Naphthalene	0.01 J	7.8
Metals		
Lead	20	90.6

GPR798-03	4-4.5(ft)
VOCs	
Benzene	0.4
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR798-04	1.5-2(ft)	2-2.5(ft)	4.5-5(ft)
VOCs			
Benzene	**440 (AC)**	**170 (C)**	**14 (C) / 5900 (BC)**
Cumene	41	42	-- / --
Ethyl Benzene	1.2 U	0.081 J	-- / --
Toluene	1.2 U	0.28 J	-- / --
1,2,4-Trimethylbenzene	2.4 U	0.51 J	-- / --
1,3,5-Trimethylbenzene	2.4 U	0.24 J	-- / --
SVOCs			
Benzo(a)pyrene	0.076 J	0.17 U	-- / --
Naphthalene	1	0.23	-- / --
Metals			
Lead	--	--	-- / --

GPR798-05	4.5-5(ft)
VOCs	
Benzene	**1.4 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR798-07	4-4.5(ft)
VOCs	
Benzene	**7.8 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR799-07	4.5-5(ft)
VOCs	
Benzene	**0.71 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

GPR798-06	4-4.5(ft)
VOCs	
Benzene	**2.2 (C)**
Cumene	--
Ethyl Benzene	--
Toluene	--
1,2,4-Trimethylbenzene	--
1,3,5-Trimethylbenzene	--
SVOCs	
Benzo(a)pyrene	--
Naphthalene	--
Metals	
Lead	--

AOI6-BH-16-036	1.25-1.75(ft)	2-2.25(ft)
VOCs		
Benzene	**0.55 J (C)**	**0.7 J (C)**
Cumene	59	180
Ethyl Benzene	4.5 U	4.2 U
Toluene	4.5 U	4.2 U
1,2,4-Trimethylbenzene	4.5 U	4.2 U
1,3,5-Trimethylbenzene	4.5 U	4.2 U
SVOCs		
Benzo(a)pyrene	0.3	0.088
Naphthalene	0.099	0.018 J
Metals		
Lead	60.8	18.9

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS < 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Cumene	10000	10000	2500
Ethyl Benzene	880	1000	70
Toluene	10000	10000	100
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location
Sampling Depth
Result
MSC Exceeded

GPR-004-01	4.5-5(ft)
VOCs	
Benzene	0.025 U
Cumene	0.049 U
Ethyl Benzene	0.022 J
Toluene	0.049 U
1,2,4-Trimethylbenzene	0.22
1,3,5-Trimethylbenzene	0.06 J
SVOCs	
Benzo(a)pyrene	7.7
Naphthalene	1.3 J
Metals	
Lead	517 (C)

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 15 30 45 60 ft
1 Inch = 15 Feet

N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

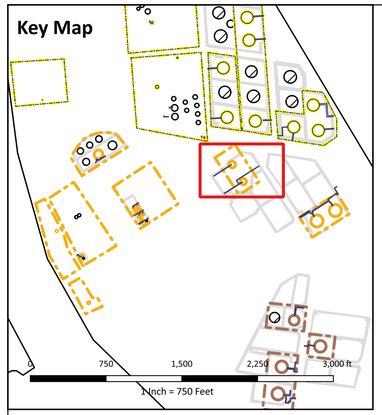
PROJECT NUMBER: P044.001.002

Soil Analytical Results
Tank Group 07
(AST GP R 798 and GP R 799)

FIGURE 11c

K:\GIS\P\P044.001_YEIMA PFD\MXD_GIS and GPR\Branch_AST\TG07\20250813\20250328_P044.001_BDH_AST_TG07_SO_Databases.dgn - Figure 11c - GPR 798 799 Analytical Results - 2025-03-31T16:51:39.000 - Created by: A.Spiers - Checked by: -Initial-

Key Map



GPR1117-03	0-0.5(ft)	3.5-4(ft)
VOCs		
Benzene	0.00032 J	0.00024 J
Cumene	0.11	0.00049 J
Ethyl Benzene	0.00099 U	0.0014 U
Toluene	0.00099 U	0.0014 U
1,2,4-Trimethylbenzene	0.002 U	0.00085 J
1,3,5-Trimethylbenzene	0.002 U	0.0028 U
SVOCs		
Benzo(a)pyrene	0.76	0.84
Naphthalene	0.46	6.3
Metals		
Lead	--	133

GPR1117-04	4.5-5(ft)
VOCs	
Benzene	0.11 J
Cumene	3.7
Ethyl Benzene	0.23 J
Toluene	0.34 J
1,2,4-Trimethylbenzene	1.3
1,3,5-Trimethylbenzene	0.41 J
SVOCs	
Benzo(a)pyrene	3.1
Naphthalene	2
Metals	
Lead	66.9

GPR1117-07	4.5-5(ft)
VOCs	
Benzene	0.00049 J
Cumene	0.0019 U
Ethyl Benzene	0.0019 U
Toluene	0.0019 U
1,2,4-Trimethylbenzene	0.0039 U
1,3,5-Trimethylbenzene	0.0039 U
SVOCs	
Benzo(a)pyrene	0.3
Naphthalene	0.45
Metals	
Lead	**981 (C)**

GPR1117-05	4-4.5(ft)
VOCs	
Benzene	0.0011
Cumene	0.0022 U
Ethyl Benzene	0.0022 U
Toluene	0.0022 U
1,2,4-Trimethylbenzene	0.0044 U
1,3,5-Trimethylbenzene	0.0044 U
SVOCs	
Benzo(a)pyrene	0.64
Naphthalene	0.32 J
Metals	
Lead	**619 (C)**

GPR1117-06	4.5-5(ft)
VOCs	
Benzene	0.0012
Cumene	0.0012 J
Ethyl Benzene	0.0019 U
Toluene	0.002
1,2,4-Trimethylbenzene	0.009
1,3,5-Trimethylbenzene	0.0025 J
SVOCs	
Benzo(a)pyrene	0.72
Naphthalene	1.2
Metals	
Lead	**687 (C)**

GPR1117-08	4.5-5(ft)
VOCs	
Benzene	0.0054
Cumene	0.00028 J
Ethyl Benzene	0.0012 U
Toluene	0.0012 U
1,2,4-Trimethylbenzene	0.0024 U
1,3,5-Trimethylbenzene	0.0024 U
SVOCs	
Benzo(a)pyrene	0.54
Naphthalene	0.14 J
Metals	
Lead	20.4

GPR1116-02	3.5-4(ft)
VOCs	
Benzene	0.017
Cumene	0.0091
Ethyl Benzene	0.0031
Toluene	0.02
1,2,4-Trimethylbenzene	0.029
1,3,5-Trimethylbenzene	0.00097 J
SVOCs	
Benzo(a)pyrene	1.2
Naphthalene	2
Metals	
Lead	97.8

GPR1116-03	4.5-5(ft)
VOCs	
Benzene	0.0012
Cumene	0.015
Ethyl Benzene	0.0004 J
Toluene	0.0008 J
1,2,4-Trimethylbenzene	0.0095
1,3,5-Trimethylbenzene	0.00056 J
SVOCs	
Benzo(a)pyrene	0.42
Naphthalene	0.52
Metals	
Lead	**1360 (C)**

GPR1116-06	3-3.5(ft)
VOCs	
Benzene	0.38 U
Cumene	18
Ethyl Benzene	0.19 J
Toluene	0.77 U
1,2,4-Trimethylbenzene	1.2 J
1,3,5-Trimethylbenzene	0.15 J
SVOCs	
Benzo(a)pyrene	0.41
Naphthalene	1.1
Metals	
Lead	104

GPR1116-07	2.5-3(ft)
VOCs	
Benzene	0.037 J
Cumene	8.4
Ethyl Benzene	0.087 J
Toluene	0.17
1,2,4-Trimethylbenzene	2.7
1,3,5-Trimethylbenzene	0.12 J
SVOCs	
Benzo(a)pyrene	8.8 U
Naphthalene	11 U
Metals	
Lead	119

GPR1116-05	2-2.5(ft)
VOCs	
Benzene	0.053 / 0.00088 U
Cumene	0.8 / 0.004
Ethyl Benzene	0.022 J / 0.0018 U
Toluene	0.078 J / 0.0018 U
1,2,4-Trimethylbenzene	0.78 / 0.0038
1,3,5-Trimethylbenzene	0.19 U / 0.0012 J
SVOCs	
Benzo(a)pyrene	0.4 / 0.18 U
Naphthalene	0.35 / 0.16 J
Metals	
Lead	67.9 / 206

GPR1116-04	4.5-5(ft)
VOCs	
Benzene	0.00056 J
Cumene	0.024
Ethyl Benzene	0.001 J
Toluene	0.0017
1,2,4-Trimethylbenzene	0.022
1,3,5-Trimethylbenzene	0.0089
SVOCs	
Benzo(a)pyrene	0.66
Naphthalene	2.8
Metals	
Lead	20.2

GPR1116-09	3-3.5(ft)
VOCs	
Benzene	0.00051 U
Cumene	0.00064 J
Ethyl Benzene	0.001 U
Toluene	0.001 U
1,2,4-Trimethylbenzene	0.002 U
1,3,5-Trimethylbenzene	0.002 U
SVOCs	
Benzo(a)pyrene	0.16 U
Naphthalene	0.2 U
Metals	
Lead	40.8

GPR1116-08	1.5-2(ft)	3-3.5(ft)
VOCs		
Benzene	**28 (C)**	0.036 / 0.0005 U
Cumene	0.022 J	0.0068 / 0.0074
Ethyl Benzene	0.34	0.001 U / 0.00099 U
Toluene	6.8	0.001 U / 0.00099 U
1,2,4-Trimethylbenzene	0.1 J	0.0026 / 0.0018 J
1,3,5-Trimethylbenzene	0.025 J	0.0021 U / 0.002 U
SVOCs		
Benzo(a)pyrene	0.17 U	0.067 J / 0.085 J
Naphthalene	0.21 U	0.081 / 0.098
Metals		
Lead	85.3	-- / --

GPR1117-02	4-4.5(ft)
VOCs	
Benzene	0.00083 U
Cumene	0.001 J
Ethyl Benzene	0.0017 U
Toluene	0.0017 U
1,2,4-Trimethylbenzene	0.0017 J
1,3,5-Trimethylbenzene	0.0015 J
SVOCs	
Benzo(a)pyrene	1.1
Naphthalene	2
Metals	
Lead	125

GPR1117-01	4.5-5(ft)
VOCs	
Benzene	0.00087 U
Cumene	0.0055
Ethyl Benzene	0.0017 U
Toluene	0.0017 U
1,2,4-Trimethylbenzene	0.0023 J
1,3,5-Trimethylbenzene	0.0016 J
SVOCs	
Benzo(a)pyrene	1
Naphthalene	1.1
Metals	
Lead	157

GPR1116-01	3-3.5(ft)
VOCs	
Benzene	0.00073 U
Cumene	0.028
Ethyl Benzene	0.0012 J
Toluene	0.00081 J
1,2,4-Trimethylbenzene	0.026
1,3,5-Trimethylbenzene	0.016
SVOCs	
Benzo(a)pyrene	0.58
Naphthalene	0.94
Metals	
Lead	19.4

GPR1116-10	3-3.5(ft)
VOCs	
Benzene	0.0003 J
Cumene	0.00054 J
Ethyl Benzene	0.00022 J
Toluene	0.00084 J
1,2,4-Trimethylbenzene	0.00072 J
1,3,5-Trimethylbenzene	0.00025 J
SVOCs	
Benzo(a)pyrene	1.4
Naphthalene	2.2
Metals	
Lead	13.9

AOI6-BH-16-039	0.5-0.6(ft)
VOCs	
Benzene	0.005 U
Cumene	0.005 U
Ethyl Benzene	0.005 U
Toluene	0.005 U
1,2,4-Trimethylbenzene	0.005 U
1,3,5-Trimethylbenzene	0.005 U
SVOCs	
Benzo(a)pyrene	0.019 J
Naphthalene	0.006 J
Metals	
Lead	7.22

GPR1116-12	2-2.5(ft)
VOCs	
Benzene	0.052
Cumene	3.8
Ethyl Benzene	0.12
Toluene	0.29
1,2,4-Trimethylbenzene	16
1,3,5-Trimethylbenzene	3.8
SVOCs	
Benzo(a)pyrene	0.62
Naphthalene	0.32
Metals	
Lead	97.5

GPR1116-13	3-3.5(ft)
VOCs	
Benzene	0.00064 J
Cumene	0.0034
Ethyl Benzene	0.0011 J
Toluene	0.0029
1,2,4-Trimethylbenzene	0.0048
1,3,5-Trimethylbenzene	0.0018 J
SVOCs	
Benzo(a)pyrene	0.97
Naphthalene	1.3
Metals	
Lead	375

GPR1116-14	3.5-4(ft)
VOCs	
Benzene	0.0012
Cumene	0.02
Ethyl Benzene	0.00041 J
Toluene	0.0019 U
1,2,4-Trimethylbenzene	0.0014 J
1,3,5-Trimethylbenzene	0.0012 J
SVOCs	
Benzo(a)pyrene	0.43
Naphthalene	0.37
Metals	
Lead	60.2

GPR1116-15	1.5-2(ft)
VOCs	
Benzene	0.05 J
Cumene	1.1
Ethyl Benzene	0.27
Toluene	0.35
1,2,4-Trimethylbenzene	2.6
1,3,5-Trimethylbenzene	0.38 J
SVOCs	
Benzo(a)pyrene	5.2
Naphthalene	3.9
Metals	
Lead	189

GPR1116-11	3-3.5(ft)
VOCs	
Benzene	0.041 U
Cumene	0.068 J
Ethyl Benzene	0.015 J
Toluene	0.083 U
1,2,4-Trimethylbenzene	0.16 U
1,3,5-Trimethylbenzene	0.16 U
SVOCs	
Benzo(a)pyrene	0.17
Naphthalene	0.16 J
Metals	
Lead	193

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Cumene	10000	10000	2500
Ethyl Benzene	880	1000	70
Toluene	10000	10000	100
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

GP R 1117 (Udex Feed)

GP R 1116 (Udex Feed)

GPR1117-05, GPR1117-06, GPR1117-07, GPR1117-08, GPR1117-04, GPR1117-03, GPR1117-02, GPR1117-01, TG07-MW-02, TG07-MW-03, GPR1116-08, GPR1116-09, GPR1116-01, GPR1116-10, GPR1116-11, GPR1116-15, GPR1116-14, GPR1116-13, GPR1116-12, GPR1116-06, GPR1116-07, GPR1116-05, GPR1116-04, GPR1116-03, GPR1116-02, B-46, C-132, AOI6 BH-12-135, AOI6 BH-12-136, AOI6 BH-12-137, BH-02-06, BH-03-06, AOI6-BH-16-039, AOI6-BH-16-010, AOI6-BH-16-012, 1332-03

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location
- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

GPR4094-01	4.5-5(ft)
VOCs	
Benzene	0.025 U
Cumene	0.049 U
Ethyl Benzene	0.022 J
Toluene	0.049 U
1,2,4-Trimethylbenzene	0.22
1,3,5-Trimethylbenzene	0.06 J
SVOCs	
Benzo(a)pyrene	7.7
Naphthalene	1.3 J
Metals	
Lead	**517 (C)**

Sample Location
Sampling Depth
Result
MSC Exceeded

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
--- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 25 50 75 100 ft
1 Inch = 25 Feet
N

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terraphase engineering

CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

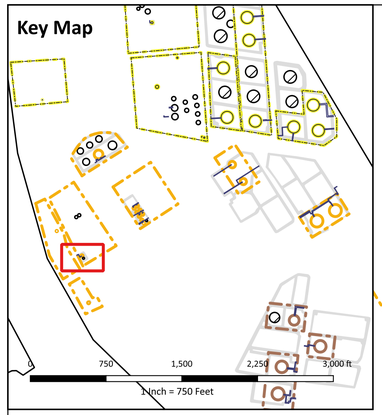
PROJECT NUMBER: P044.001.002

Soil Analytical Results Tank Group 07 (ASTs GP R 1116 and GP R 1117)

FIGURE 11d

N:\GIS\Proj\P044.001_PEMA-PES\GIS\5_GIS and GPKG\Arcmap_AST\TG07\20250813\20250813_P044.001_AOI_AST_TG07_SO_Shutdown.mpk - Figure 11d - GP R 1116 and 1117 Analytical Results - 2025-03-31T14:51:39.000 - Created by: A.Spiers - Checked by: initial

Key Map



GPU767-01	3-3.5(ft)
VOCs	
Benzene	0.00069 U
Cumene	0.0011 J
Ethyl Benzene	0.0014 U
Toluene	0.0014 U
1,2,4-Trimethylbenzene	0.0028 U
1,3,5-Trimethylbenzene	0.0028 U
SVOCs	
Benzo(a)pyrene	0.07 J
Naphthalene	0.19 U
Metals	
Lead	380

GPU767-04	4.5-5(ft)
VOCs	
Benzene	0.021 J
Cumene	4.8
Ethyl Benzene	0.047 J
Toluene	0.17
1,2,4-Trimethylbenzene	0.037 J
1,3,5-Trimethylbenzene	0.14 U
SVOCs	
Benzo(a)pyrene	0.049 J
Naphthalene	0.19 U
Metals	
Lead	121

GPU767-02	4.5-5(ft)
VOCs	
Benzene	0.00007 J
Cumene	0.0093
Ethyl Benzene	0.00016 J
Toluene	0.00018
1,2,4-Trimethylbenzene	0.00027 J
1,3,5-Trimethylbenzene	0.0001 J
SVOCs	
Benzo(a)pyrene	0.14 J
Naphthalene	0.048 J
Metals	
Lead	115

GPU767-05	4-4.5(ft)
VOCs	
Benzene	0.044
Cumene	24
Ethyl Benzene	0.12
Toluene	0.062
1,2,4-Trimethylbenzene	0.075 J
1,3,5-Trimethylbenzene	0.017 J
SVOCs	
Benzo(a)pyrene	0.15 U
Naphthalene	0.18 U
Metals	
Lead	12.5

GPU767-07	3-3.5(ft)
VOCs	
Benzene	0.001 U
Cumene	0.00049 J
Ethyl Benzene	0.002 U
Toluene	0.002 U
1,2,4-Trimethylbenzene	0.004 U
1,3,5-Trimethylbenzene	0.004 U
SVOCs	
Benzo(a)pyrene	0.14 U
Naphthalene	0.17 U
Metals	
Lead	87

GPU767-03	4.5-5(ft)
VOCs	
Benzene	0.071
Cumene	1.6
Ethyl Benzene	0.03 J
Toluene	0.052 J
1,2,4-Trimethylbenzene	0.032 J
1,3,5-Trimethylbenzene	0.016 J
SVOCs	
Benzo(a)pyrene	0.16 U
Naphthalene	0.2 U
Metals	
Lead	72

GPU767-06	3-3.5(ft)
VOCs	
Benzene	0.00047 U
Cumene	0.001
Ethyl Benzene	0.00094 U
Toluene	0.00094 U
1,2,4-Trimethylbenzene	0.0019 U
1,3,5-Trimethylbenzene	0.0019 U
SVOCs	
Benzo(a)pyrene	0.42
Naphthalene	0.068 J
Metals	
Lead	**688 (C)**

GP768-6	2-2(ft)
VOCs	
Benzene	0.0005 U
Cumene	0.0009 U
Ethyl Benzene	0.0009 U
Toluene	0.0009 U
1,2,4-Trimethylbenzene	0.0009 U
1,3,5-Trimethylbenzene	0.0009 U
SVOCs	
Benzo(a)pyrene	0.021
Naphthalene	0.0009 U
Metals	
Lead	10.8

GP768-2	3-3(ft)
VOCs	
Benzene	0.0008 J
Cumene	0.004 J
Ethyl Benzene	0.001 U
Toluene	0.001 U
1,2,4-Trimethylbenzene	0.001 U
1,3,5-Trimethylbenzene	0.001 U
SVOCs	
Benzo(a)pyrene	0.12
Naphthalene	0.001 U
Metals	
Lead	86.3

GP768-1	3-3(ft)
VOCs	
Benzene	0.0006 J
Cumene	0.0009 U
Ethyl Benzene	0.0009 U
Toluene	0.0009 U
1,2,4-Trimethylbenzene	0.0009 U
1,3,5-Trimethylbenzene	0.0009 U
SVOCs	
Benzo(a)pyrene	0.026
Naphthalene	0.0009 U
Metals	
Lead	18.6

GP768-5	2-2(ft)
VOCs	
Benzene	0.005
Cumene	0.001 U
Ethyl Benzene	0.001 U
Toluene	0.001 U
1,2,4-Trimethylbenzene	0.001 U
1,3,5-Trimethylbenzene	0.001 U
SVOCs	
Benzo(a)pyrene	0.05
Naphthalene	0.001 U
Metals	
Lead	27.8

GP768-4	2-2(ft)
VOCs	
Benzene	0.29 U
Cumene	70
Ethyl Benzene	0.72 J
Toluene	1.7 J
1,2,4-Trimethylbenzene	19
1,3,5-Trimethylbenzene	15
SVOCs	
Benzo(a)pyrene	0.33
Naphthalene	3.4
Metals	
Lead	39.5

GP768-3	3-3(ft)
VOCs	
Benzene	0.001 J
Cumene	0.001 J
Ethyl Benzene	0.001 U
Toluene	0.001 J
1,2,4-Trimethylbenzene	0.001 U
1,3,5-Trimethylbenzene	0.001 U
SVOCs	
Benzo(a)pyrene	0.079
Naphthalene	0.001 U
Metals	
Lead	91.7

GP U 767 (Recovered Oil)

GP U 768

FG07-MW-08

Legend

- Property Boundary
- Tank Group 06 Boundary
- Tank Group 07 Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Monitoring Well
- Evergreen Monitoring Well

BDH Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Evergreen Soil Sample Location

- Exceeds DC MSC
- Exceeds SGW MSC
- No Exceedances

Sample Location

GP8494-01	4.5-5(ft)
VOCs	
Benzene	0.025 U
Cumene	0.049 U
Ethyl Benzene	0.023 J
Toluene	0.049 U
1,2,4-Trimethylbenzene	0.22
1,3,5-Trimethylbenzene	0.06 J
SVOCs	
Benzo(a)pyrene	7.7
Naphthalene	1.3 J
Metals	
Lead	**517 (C)**

Sampling Depth

Result

MSC Exceeded

Chemical	{A} Non-Res Direct Contact with Surface Soil (0-2 ft) MSCs (mg/kg)	{B} Non-Res Direct Contact with Subsurface Soil (2-15 ft) MSCs (mg/kg)	{C} Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSCs (mg/kg)
VOCs			
Benzene	280	330	0.5
Cumene	10000	10000	2500
Ethyl Benzene	880	1000	70
Toluene	10000	10000	100
1,2,4-Trimethylbenzene	4700	5400	300
1,3,5-Trimethylbenzene	4700	5400	93
SVOCs			
Benzo(a)pyrene	91	190000	46
Naphthalene	66	77	25
Metals			
Lead	1000	190000	450

Qualifiers:
U -- Not Detected
J -- Estimated Concentration
-- -- Not Analyzed

Abbreviations:
DC -- Direct Contact
MSC -- Medium Specific Concentration
SGW -- Soil-to-Groundwater

Exceedance Codes:
(A) Greater than NonRes Surface DC MSC
(B) Greater than NonRes Subsurface DC MSC
(C) Greater than NonRes Used Aquifer SGW MSC

Notes:
All concentrations are presented in mg/kg.
Results exceeding the MSCs are shaded.
Sample locations symbolizing NonRes DC exceedances indicate that either a surface sample exceeds the NonRes DC Surface MSC (0-2 ft) or a subsurface sample exceeds the NonRes DC Subsurface MSC (2-15 ft).

0 13 26 39 52 ft

1 Inch = 13 Feet

N

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Soil Analytical Results Tank Group 07 (AST GPU 767)

FIGURE 11e

N:\GIS\P\P044.001_PEDRA #35\GIS\1_GIS and GPKG\Revised_AST\TG07\20250813\20250729_P044.001_BDH_AST_TG07_SO_Databases.sgd - Figure 11e - GPU 767 Analytical Results 2025-01-31T15:51:19.000 Created by: A.Sipes Checked by: initial

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 1088
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 798
GP 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Benzene in Soil

FIGURE 12a

N:\GIS\P\P044.001_PEMA\FIS\GIS_GDZ and GPKG\Branch_AST\TG06\20250311\GIS2319_P044.001_BDH_AST_TG06_TG07_R4.aprx - Figure 12a - General Distribution in Soil - 2025-03-18T15:56:13.000 - Created by: M.Civitillo - Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 1088
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 799
GP R 798
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 850
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Cumene in Soil

FIGURE 12b

N:\GIS\P\P044.001_PEMA\FIS\GIS\05_GIS and GPR\Branch_AST\TGS06\20250331\GIS\P044.001_BDH_AST_TGS6_TGS7_R4.aprx - Figure 12c - General Distribution in Soil - 2025-03-28T15:56:13.000 - Created by: M.Civitillo - Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 825
PB 823
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Ethyl Benzene in Soil

FIGURE 12c

N:\GIS\P\P044.001_PEMA\FIS\GIS_002.and.GPR\Branch_AST\TGS06\20250331\GIS2319_P044.001_BDH_AST_TGS6_TGS7_R4.aprx - Figure 12c - General Distribution in Soil - 2025-03-28T15:56:13.000 - Created By: M.Civitillo - Checked By: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 1088
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP 798
GP 799
GP R 790
GP R 791
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 884
PB 820
PB 847
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PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 825
PB 823
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Toluene in Soil

FIGURE 12d

N:\GIS\P\P044.001_PEMA\FIS\GIS_002.aprx\GIS\Branch_AST\TGS06\20250331\GIS2319_P044.001_BDH_AST_TGS6_TGS7_R4.aprx - Figure 12c - General Distribution in Soil - 2021-03-18T15:56:13.000 - Created By: M.Civitillo - Checked By: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
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GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 821
PB 848
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 825
PB 823
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of 1,2,4-Trimethylbenzene in Soil

FIGURE 12e

N:\GIS\P\P044.001_PEMA\FIS\GIS\05_GIS and GPR\Branch_AST\TGS06\20250331\GIS\P044.001_BDH_AST_TGS6_TGS7_R4.aprx Figure 12c - General Distribution in Soil 2025-03-28T15:56:13.000 Created by: M.Civitillo Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP R 218
GP R 217
PB 254
PB 884
PB 820
PB 847
PB 250
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 825
PB 823
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of 1,3,5-Trimethylbenzene in Soil

FIGURE 12f

N:\GIS\P\P044.001_PEMA\FIS\GIS\05_GIS and GPR\Branch_AST\TGS06\20250331\GIS\2318_P044.001_BDH_AST_TGS6_TGS7_R4.aprx Figure 12c - General Distribution in Soil 2025-03-28T15:56:13.000 Created by: M.Civitillo Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
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GP 1066
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GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 494
GP 283
GP R 284
GP 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 884
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 825
PB 823
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Benzo(a)pyrene in Soil

FIGURE 12g

N:\GIS\P\P044.001_PEMA\FIS\GIS_DOZ and GP\MXD\Branch_AST\TOS\[20250331]\DoZ\P44.001_BDH_AST_TOS_TG07_R4.mpr - Figure 12c - General Distribution in Soil - 2025-03-28T15:56:13.000 Created by: M.Civitillo Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1058
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP 283
GP R 284
GP R 280
GP R 282
GP 1113
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 1088
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 250
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

N

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CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Naphthalene in Soil

FIGURE 12h

N:\GIS\P\P044.001_PEMA\FIS\GIS\05_GIS and GPR\Branch_AST\TGS06\20250331\GIS\2318_P044.001_BDH_AST_TGS6_TGS7_R4.aprx Figure 12c - General Distribution in Soil 2025-03-28T15:56:13.000 Created by: M.Civitillo Checked by: K.Long

GP R 1039
GP R 1038
GP C1 1100
GP R 1101
GP 1202
GP 1123
GP 1118
GP R 973
GP 78A
GP 77A
GP R 1047
GP 1050
GP 1064
GP 1069
GP 1065
GP R 1051
GP 1068
GP 1066
GP 1052
GP 1067
GP 75A
GP 76A
GP 496
GP 497
GP 493
GP 498
GP R 494
GP 495
GP R 1088
GP U 677
GP U 676
GP 79A
GP U 767
GP U 768
GP R 798
GP R 799
GP R 791
GP R 790
GP R 793
GP R 792
GP R 794
GP C2 797
GP R 796
GP 283
GP R 284
GP R 280
GP R 282
GP 1117
GP 279
GP R 281
GP R 273
GP 275
GP 278
GP R 271
GP 274
GP 277
GP R 286
GP R 270
GP R 273
GP R 276
GP R 285
GP R 1117
GP R 1116
GP R 250
GP R 251
GP R 218
GP R 217
PB 254
PB 820
PB 847
PB 850
PB 848
PB 821
PB 255
PB 251
PB 256
PB 822
PB 252
PB 826
PB 257
PB 823
PB 825
PB 258
PB 824
PB 253

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Associated Piping
- BDH Soil Sample Location
- Evergreen Soil Sample Location

Soil Concentration (mg/kg)

- ≤ 1.0
- > 1.0 and ≤ 10
- > 10 and ≤ 100
- > 100 and ≤ 1,000
- > 1,000 and ≤ 10,000
- > 10,000

Notes:
Results presented are the maximum concentrations found at each location regardless of depth.

0 100 200 300 400 ft
1 Inch = 200 Feet

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CLIENT: Bellwether District Holdings, LLC
PROJECT: Aboveground Storage Tank Closure
PROJECT NUMBER: P044.001.002

General Distribution of Lead in Soil

FIGURE 12i

N:\GIS\P\P044.001_PEMA\FIS\GIS_DOC and GPKG\Branch_AST\TG06\20250331\GIS2318_P044.001_BDH_AST_TG06_TG07_R4.aprx Figure 12i - General Distribution in Soil 2025-03-28T15:56:13.000 Created by: M.Civitillo Checked by: K.Long

TG06-MW05	04/11/2024	05/14/2024
VOCs		
Benzene	--	--
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	0.0001 U	0.0036
Metals		
Lead	0.00177	**0.118 {A}**

TG06-MW03	04/11/2024	05/14/2024
VOCs		
Benzene	--	--
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	--	--
Metals		
Lead	0.001 U	**0.0152 {A}**

TG06-MW03	04/11/2024	05/14/2024
VOCs		
Benzene	--	--
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	--	--
Metals		
Lead	0.001 U	**0.0152 {A}**

TG06-MW02	04/11/2024	05/14/2024
VOCs		
Benzene	0.0005 U	0.0005 U
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	--	--
Metals		
Lead	0.001 U	**0.0119 {A}**

TG06-MW04	05/14/2024	06/13/2024
VOCs		
Benzene	**0.0058 {A}**	0.00087
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	--	--
Metals		
Lead	--	--

TG06-MW04	05/14/2024	06/13/2024
VOCs		
Benzene	**0.0058 {A}**	0.00087
Cumene	--	--
1,2-Dichloroethane	--	--
Toluene	--	--
SVOCs		
Naphthalene	--	--
Metals		
Lead	--	--

TG07-MW-01	01/05/2023	02/08/2023
VOCs		
Benzene	0.0005 U	0.0005 U
Cumene	0.00034 J	0.0005 U
1,2-Dichloroethane	0.0005 U	0.0005 U
Toluene	0.00075 U	0.00031 J
SVOCs		
Naphthalene	0.0001 U	0.0001 U
Metals		
Lead	0.000593 J	0.000663 J

TG07-MW-02	01/04/2023	02/08/2023
VOCs		
Benzene	**0.017 {A}**	**0.019 {A}**
Cumene	0.067	0.03
1,2-Dichloroethane	0.0005 U	0.0005 U
Toluene	0.0014	0.0037
SVOCs		
Naphthalene	0.0009	0.00033
Metals		
Lead	**0.00791 {A}**	0.001 U

TG07-MW-03	01/04/2023	02/08/2023
VOCs		
Benzene	0.00036 J	0.00023 J
Cumene	0.004	0.0024
1,2-Dichloroethane	0.0005 U	0.0005 U
Toluene	0.00023 J	0.00089
SVOCs		
Naphthalene	0.00013	0.00013
Metals		
Lead	0.001 U	0.001 U

TG07-MW-04	01/05/2023	02/08/2023
VOCs		
Benzene	**0.036 {A}**	**0.064 {A}**
Cumene	0.29	0.36
1,2-Dichloroethane	0.001 U	0.002 U
Toluene	0.0038	0.0046
SVOCs		
Naphthalene	0.0001 U	0.0011
Metals		
Lead	0.001 U	0.001 U

TG07-MW-05	01/05/2023	02/09/2023
VOCs		
Benzene	**11 {A}**	**17 {A} / 17 {A}**
Cumene	**7.2 {A}**	**8.4 {A} / 8.4 {A}**
1,2-Dichloroethane	0.05 U	**0.1 U / 0.13 {A}**
Toluene	0.2	0.35 / 0.34
SVOCs		
Naphthalene	0.017	0.019 / 0.021
Metals		
Lead	0.001 U	0.000767 J / 0.000628 J

TG07-MW-08	01/05/2023	02/08/2023
VOCs		
Benzene	0.012 U	0.02 U
Cumene	**4.4 {A}**	**4.6 {A}**
1,2-Dichloroethane	0.012 U	0.02 U
Toluene	0.019 U	0.03 U
SVOCs		
Naphthalene	0.0031	0.0016
Metals		
Lead	0.001 U	0.001 U

TG07-MW-07	01/06/2023
VOCs	
Benzene	**240 {A}**
Cumene	**5.3 {A}**
1,2-Dichloroethane	0.2 U
Toluene	**27 {A}**
SVOCs	
Naphthalene	**0.13 {A}**
Metals	
Lead	0.001 U

TG07-MW-07	01/06/2023
VOCs	
Benzene	**240 {A}**
Cumene	**5.3 {A}**
1,2-Dichloroethane	0.2 U
Toluene	**27 {A}**
SVOCs	
Naphthalene	**0.13 {A}**
Metals	
Lead	0.001 U

Sample Location
Sample Date
Result
MSC Exceedance

Groundwater Screening Levels	
Chemical	{A} Non-Residential GW Used Aquifer (TDS ≤ 2500) (mg/L)
VOCs	
Benzene	0.005
Cumene	3.5
1,2-Dichloroethane	0.005
Toluene	1.0
SVOCs	
Naphthalene	0.10
Metals	
Lead	0.005

Legend

- Property Boundary
- Tank Group 04 Boundary
- Tank Group 05 Boundary
- Tank Group 06 Boundary
- Tank Group 07/07A Boundary
- Tank Group 08 Boundary
- Previously Closed AST
- Remediation System
- Evergreen's October 2022 Pilot Test Study Area
- Berm Boundary/Concrete Pad
- Current Estimated Extent of LNAPL

Evergreen's Estimated Extent of LNAPL

- Light Distillate
- Mix of Light/Middle Distillate
- Mix of Light/Heavy Distillate
- Middle Distillate
- Mix of Middle/Heavy Distillate
- Heavy Distillate
- Crude Oil
- Unknown
- Associated Piping
- GW Flow Direction
- BHD Monitoring Well
- Evergreen Monitoring Well

Qualifiers:
U - Not Detected

Abbreviations:
GW - Groundwater
MSC - Medium Specific Concentration

Exceedance Code:
[A] Non-Res GW Used Aquifer

Notes:
All concentrations are presented in mg/L. Results exceeding the MSCs are shaded. Interpreted groundwater flow is primarily based on the 2025 water-table elevation data prepared by Stantec in their Site-Wide Fate and Transfer RIR (Stantec 2025) and supplemented with water-table elevation data prepared by Terraphase (February 2023).
The current estimated extent of LNAPL is based upon the most recent gauging event at each location, which range from October 8, 2019 to October 28, 2024.
The current estimated extent of LNAPL was only estimated in AOI 6 and AOI7.
Evergreen's estimated extent of LNAPL is prepared by Stantec and documented in the AOI reports for the Facility and are based on gauging events completed between 2010 through 2016.

Evergreen's Inactive 27 Pump House Passive Recovery System

Evergreen's Inactive Penrose Avenue Remediation System

Evergreen's Inactive S-30 System

0 100 200 300 400 ft
1 Inch = 200 Feet

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CLIENT: Bellwether District Holdings, LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Characterization GW Analytical Results

FIGURE 13

N:\GIS\P\P044.001_PENSKE\PSGIS_GIS2 and GPKG\Branch_AST\TG06\20250313\20250313_P044.001_BOH_AST_TG06_TG07_RIR.qgz - figure 13 - Groundwater Analytical Results - 2025-03-28T15:56:13.000 Created By: MJCrivello Checked By: K. Long

Appendix A

TG07A Closure Report and Completion Email

terraphase engineering

February 20, 2024

Chelsea Fazzino, PG
Licensed Professional Geologist
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

sent via email to cfazzino@pa.gov

Subject: **Tank Group 07A Closure Report**
Former Philadelphia Energy Solutions Refinery
3144 West Passyunk Avenue, Philadelphia, PA

Dear Ms. Fazzino:

Terraphase Engineering Inc. (Terraphase) has prepared this *Tank Group 07A Closure Report* (Tank Closure Report), on behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM). This Tank Closure Report presents the alternate Site Assessment analytical results associated with Tank Group 07A (the "Site"). The results of the alternate Site Assessment activities support obtaining regulatory closure of aboveground storage tanks (ASTs) GP R 250 (PADEP No. 019A) and GP R 251 (PADEP No. 020A), known as Tank Group 07A, at the former Philadelphia Energy Solutions (PES) Refinery property located at 3144 West Passyunk Avenue in Philadelphia, Pennsylvania (**Figure 1**). The presence of standing water, determined to be shallow groundwater emergent at the ground surface, is present within the containment berm for former ASTs GP R 250 and GP R 251. This has prevented PESRM from being able to complete Site Assessment sampling in accordance with Terraphase's (2021) *AST Closure Work Plan*. Terraphase shared an alternative approach to complete Site Assessment sampling with the Pennsylvania Department of Environmental Protection (PADEP) on December 1, 2023. PADEP approved the alternate Site Assessment scope of work for Tank Group 07A in its correspondence dated December 6, 2023.

Background

The demolition and decommissioning of the subject ASTs began and was completed in September 2021. Prior to demolition, the primary products held within these tanks were Light Cycle Oil (GP R 250) and Untreated Distillate (GP R 251). Additional details regarding the size, contents, and construction of the tanks are provided in **Table 1**. On behalf of PESRM, JD2 Environmental, Inc. and ACI submitted to PADEP the required tank registration amendments, copies of which are provided as **Appendix A**. In addition, the Aboveground Storage Tank System Closure Report form (2630-FM-BECB0514) is included in **Appendix B**.

Alternate Site Assessment Sampling

Standing water has been observed within the containment berm for former ASTs GP R 250 and GP R 251 for several months. NorthStar Contracting Group, Inc. (NorthStar) conducted dewatering activities in the area but was unsuccessful. Additionally, Terraphase conducted a comparison of recent groundwater elevations to the surface elevation in the area and it indicated that groundwater is at an elevation similar to or greater than the ground surface elevation in the area of the two tanks. Terraphase also installed piezometers and measured groundwater levels between July 2023 and August 2023. The results of this monitoring indicated the groundwater elevation in the piezometers are greater than or equal to the elevation of the surface water during the majority of the gauging events and are provided in **Appendix C.** The PADEP agreed with this assessment.

Based on the preceding evidence demonstrating that the standing water in Tank Group 07A is in connection with groundwater, Site Assessment sampling could not be completed in accordance with the PADEP-approved *AST Closure Work Plan* (Terraphase 2021). As such, PESRM presented an alternative Site Assessment scope of work to PADEP representatives and submitted the scope on December 1, 2023, which PADEP approved on December 6, 2023.

Soil and groundwater sampling was completed by Terraphase and their subcontractor MB Drilling, LLC on December 15, 2023. Prior to the initiation of the sampling activities, a review of available information provided by Facility representatives regarding the presence/absence of underground utilities was used in the proposed sampling locations. In addition, a private locate was performed using geophysical and electromagnetic techniques to identify potential utilities or subsurface structures at proposed drilling locations.

Soil borings were completed using direct-push (i.e., Geoprobe) drilling methods and advanced to 5 feet below ground surface (ft bgs). Continuous soil cores were collected, and field screened using a photoionization detector to identify potentially impacted zones. Soil boring logs are provided in **Appendix D**. In total, seven soil borings were installed during the Site Assessment, as close in proximity to the ASTs and standing water as possible. Terraphase collected a soil sample from one 6-inch interval in each boring, as well as a field duplicate at boring GPR250-03. In addition, groundwater samples were collected from two nearby piezometers (previously installed to evaluate groundwater elevations in the area), and two surface water samples were collected from the standing water within the TG07A secondary containment berms. A field duplicate sample was collected at piezometer TG07A-PZ01. Site Assessment sampling locations are depicted on **Figure 2**.

Soil, groundwater, and surface water samples were analyzed for Short List 1-5[1]. Laboratory analytical services were provided by Alpha Analytical, Inc. of Westborough, Massachusetts, which is a PADEP-certified laboratory. Samples submitted for analyses were placed directly into laboratory provided glassware and stored on ice in a cooler under appropriate chain of custody protocol.

[1] Short List 1-5 includes analytes benzene, cumene, 1,2-dibromoethane, 1,2-dichloroethane, ethyl benzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, methyl tert-butyl ether, xylenes, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, chrysene, fluorene, naphthalene, phenanthrene, pyrene, and lead.

Sampling Results

Soil sampling results were compared to the following Non-Residential (Non-Res) Medium Specific Concentrations (MSCs) to help identify potential releases to the environment from the ASTs and their associated piping:

- Non-Res Direct Contact (DC) Numeric Values for Surface Soil (0-2 ft bgs)
- Non-Res DC Numeric Value for Subsurface Soil (2-15 ft bgs)
- Non-Res Soil-to-Groundwater (SGW) Numeric Values for Used Aquifers (Total Dissolved Solids [TDS] ≤ 2,500)

As presented in **Table 2a**, none of the Site Assessment soil samples collected in proximity to GP R 250 or GP R 251 exhibited concentrations greater than the applicable MSCs. **Figure 2** presents the spatial distribution of the soil sampling locations. **Appendix E** provides copies of the laboratory data packages.

Groundwater and surface water[2] sampling results were compared to the following Non-Res MSCs to help identify potential releases to the environment from the ASTs and their associated piping:

- Non-Res Groundwater Numeric Values for Used Aquifers (TDS ≤ 2,500)

As presented in **Table 2b**, none of the Site Assessment groundwater or surface water samples collected in proximity to GP R 250 or GP R 251 exhibited concentrations greater than the applicable MSCs. **Figure 2** presents the spatial distribution of the groundwater sampling locations. **Appendix E** provides copies of the laboratory data packages.

Conclusion

Terraphase has prepared this Tank Closure Report, on behalf of PESRM, to detail the results of the alternate Site Assessment activities in Tank Group 07A. The specific ASTs addressed in this Tank Closure Report include GP R 250 (PADEP No. 019A) and GP R 251 (PADEP No. 020A).

Visual observations of the ASTs in Tank Group 07A revealed no indications of release. Based on the soil, groundwater, and surface water results, no evidence of a release from GP R 250 or GP R 251 was identified. The Site Assessment outcome for the two tanks was "No Obvious Contamination – Sample Results Meet Action Levels." Based on the information presented, PESRM has overcome the presumption of liability under Act 32 as detailed in 25 PA Code §245.303(d) and respectfully requests closure of tanks GP R 250 and GP R 251 in Tank Group 07A.

Sincerely,

for Terraphase Engineering Inc.

Kevin Long
Principal Consultant

Nicholas J. Scala
Principal Geologist, PG, LSRP

[2] Based on the evidence demonstrating that the standing water in Tank Group 07A is in connection with groundwater, the surface water results were compared to the applicable groundwater MSCs.

Attachments (10):

- Table 1 Aboveground Storage Tank Details
- Table 2a Summary of Soil Analytical Results
- Table 2b Summary of Groundwater and Surface Water Analytical Results
- Figure 1 Facility Location
- Figure 2 Soil, Groundwater, and Surface Water Sampling Locations
- Appendix A Tank Registration Amendment Forms
- Appendix B Aboveground Storage Tank System Closure Report Forms
- Appendix C October 4, 2023 *Technical Memorandum – Tank Group 07A Gauging Summary* prepared by Terraphase Engineering on behalf of PESRM
- Appendix D Soil Boring Logs and Piezometer Completion Records
- Appendix E Laboratory Data Package

cc: Julianna Connolly, LSP, PESRM
Amy Piccone, PESRM
Richard Staron, PADEP

Tables

1 Aboveground Storage Tank Details

2a Summary of Soil Analytical Results

2b Summary of Groundwater and Surface Water Analytical Result

Table 1
Aboveground Storage Tank Details
Tank Group 07A
Philadelphia Energy Solutions Refining and Marketing LLC, Philadelphia, PA

Facility	State Regulation Number	Tank Number	Design Capacity (gal)	Primary Product	Proposed Analyte List[x]	Regulatory Status	Facility ID	Status Modification Date	Tank Type	Double Bottom	Diameter (ft)	Height (ft)	Remaining Liquid (gal)	GPS Survey Complete	Demo Complete	Storage Tanks Reg./Permit App Form Submitted	Release Notification	Incident No.	Int. Remedial/ Corrective Action Required
Girard Point	019A	GP R 250	3,045,000	Light Cycle Oil	Short List 1-5	R	51-33624	9/29/2021	IFR	Y	120	40		Y	Y*	11/1/2021			
Girard Point	020A	GP R 251	3,045,000	Distillate, Untreated	Short List 1-5	R	51-33624	9/29/2021	IFR	Y	120	40		Y	Y*	11/1/2021			

Notes
* - Double bottom still to be removed.

Abbreviations
IFR -- Internal Floating Roof
No -- No
R -- Removed
Y -- Yes

Table 2a
Summary of Soil Analytical Results
Tank Group 07A
Philadelphia Energy Solutions Refining and Marketing LLC, Philadelphia, PA

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR250-01	GPR250-02	GPR250-03	GPR250-03	GPR251-01	GPR251-02	GPR251-03	GPR251-04
Field Sample ID			GPR250-01-SS01	GPR250-02-SS01	GPR250-03-SS01	GPR250-03-SS01D	GPR251-01-SS01	GPR251-02-SS01	GPR251-03-SS01	GPR251-04-SS01
Collection Depth (ft bgs)			2.5 - 3.0	1.5 - 2.0	2.0 - 2.5	2.0 - 2.5	0.0 - 0.5	3.0 - 3.5	2.5 - 3.0	1.0 - 1.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/15/2023	12/15/2023	12/15/2023	12/15/2023	12/15/2023	12/15/2023	12/15/2023	12/15/2023
Comments						Field Duplicate				
Volatile Organic Compounds										
Benzene	280	0.5	0.00028 J (0.00042)	ND (0.00046)	ND (0.00046)	ND (0.00048)	ND (0.00042)	ND (0.00045)	ND (0.00047)	ND (0.00054)
Cumene	10000	2500	ND (0.00084)	ND (0.00091)	ND (0.00093)	ND (0.00097)	ND (0.00085)	ND (0.00091)	ND (0.00094)	ND (0.0011)
1,2-Dibromoethane	3.7	0.005	ND (0.00042)	ND (0.00046)	ND (0.00046)	ND (0.00048)	ND (0.00042)	ND (0.00045)	ND (0.00047)	ND (0.00054)
1,2-Dichloroethane	85	0.5	ND (0.00084)	ND (0.00091)	ND (0.00093)	ND (0.00097)	ND (0.00085)	ND (0.00091)	ND (0.00094)	ND (0.0011)
Ethyl Benzene	880	70	ND (0.00084)	ND (0.00091)	ND (0.00093)	ND (0.00097)	ND (0.00085)	ND (0.00091)	ND (0.00094)	ND (0.0011)
Methyl tert-butyl ether	8500	2	ND (0.0017)	ND (0.0018)	ND (0.0018)	ND (0.0019)	ND (0.0017)	ND (0.0018)	ND (0.0019)	ND (0.0022)
Toluene	10000	100	ND (0.00084)	ND (0.00091)	ND (0.00093)		ND (0.00085)	ND (0.00091)	ND (0.00094)	ND (0.0011)
1,2,4-Trimethylbenzene	4700	300	0.00038 J (0.0017)	ND (0.0018)	ND (0.0018)	ND (0.0019)	ND (0.0017)	ND (0.0018)	ND (0.0019)	ND (0.0022)
1,3,5-Trimethylbenzene	4700	93	ND (0.0017)	ND (0.0018)	ND (0.0018)	ND (0.0019)	ND (0.0017)	ND (0.0018)	ND (0.0019)	ND (0.0022)
Xylenes (total)	7900	1000	ND (0.00084)	ND (0.00091)	ND (0.00093)	ND (0.00097)	ND (0.00085)	ND (0.00091)	ND (0.00094)	ND (0.0011)
Semivolatile Organic Compounds										
Anthracene	190000	350	0.11 J (0.12)	ND (0.12)	0.057 J (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.13)
Benzo(a)anthracene	130	340	0.37 (0.12)	0.032 J (0.12)	0.28 (0.12)	0.035 J (0.12)	0.078 J (0.12)	0.022 J (0.11)	0.06 J (0.12)	0.15 (0.13)
Benzo(a)pyrene	91	46	0.45 (0.16)	ND (0.16)	0.27 (0.16)	ND (0.16)	0.081 J (0.16)	ND (0.15)	0.076 J (0.16)	0.21 (0.17)
Benzo(b)fluoranthene	76	170	0.58 (0.12)	0.058 J (0.12)	0.31 (0.12)	0.042 J (0.12)	0.093 J (0.12)	ND (0.11)	0.084 J (0.12)	0.23 (0.13)
Benzo(g,h,i)perylene	190000	180	0.3 (0.16)	0.038 J (0.16)	0.14 J (0.16)	ND (0.16)	0.043 J (0.16)	ND (0.15)	0.044 J (0.16)	0.13 J (0.17)
Chrysene	760	230	0.42 (0.12)	0.039 J (0.12)	0.28 (0.12)	0.038 J (0.12)	0.077 J (0.12)	0.022 J (0.11)	0.063 J (0.12)	0.17 (0.13)
Fluorene	130000	3800	0.021 J (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.19)	ND (0.19)	ND (0.2)	ND (0.22)
Naphthalene	66	25	0.19 (0.04)	ND (0.039)	ND (0.04)	ND (0.039)	ND (0.039)	ND (0.037)	0.035 J (0.039)	0.18 (0.043)
Phenanthrene	190000	10000	0.24 (0.12)	0.028 J (0.12)	0.28 (0.12)	0.056 J (0.12)	0.092 J (0.12)	ND (0.11)	0.046 J (0.12)	0.12 J (0.13)
Pyrene	96000	2200	0.55 (0.12)	0.045 J (0.12)	0.48 (0.12)	0.069 J (0.12)	0.13 (0.12)	0.033 J (0.11)	0.077 J (0.12)	0.2 (0.13)
Metals										
Lead	1000	450	350 (2.35)	36.3 (2.24)	19.8 (2.36)	17.2 (2.31)	38 (2.29)	21.8 (2.28)	40.1 (2.32)	66.7 (2.63)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 No concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 No concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
J - Estimated Concentration

Table 2b

Summary of Groundwater and Surface WaterAnalytical Results

Tank Group 07A

Philadelphia Energy Solutions Refining and Marketing LLC, Philadelphia, PA

Location	Non-Res Used	TG07A-PZ01	TG07A-PZ01	TG07A-PZ02	TG07A-SW01	TG07A-SW02
Field Sample ID	Aquifer	TG07A-PZ01-231215	TG07A-PZ01-231215D	TG07A-PZ02-231215	TG07A-SW01-231215	TG07A-SW02-231215
Sample Method	(TDS ≤ 2500)	Grab	Grab	Grab	Grab	Grab
Sample Date	Groundwater	12/15/2023	12/15/2023	12/15/2023	12/15/2023	12/15/2023
Comments	MSC		Field Duplicate			
Volatile Organic Compounds						
Benzene	5	ND (0.5)	ND (0.5)	ND (0.5)	0.19 J (0.5)	0.2 J (0.5)
Cumene	3500	ND (0.5)	ND (0.5)	ND (0.5)	0.19 J (0.5)	0.19 J (0.5)
1,2-Dibromoethane	0.05	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
1,2-Dichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethyl Benzene	700	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methyl tert-butyl ether	20	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Toluene	1000	ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)	ND (0.75)
1,2,4-Trimethylbenzene	530	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
1,3,5-Trimethylbenzene	530	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
Xylenes (total)	10000	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)
Semivolatile Organic Compounds						
Anthracene	66	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(a)anthracene	3.9	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Benzo(a)pyrene	0.2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Benzo(b)fluoranthene	1.2	ND (0.05)	ND (0.05)	ND (0.05)	0.01 J (0.05)	0.02 J (0.05)
Benzo(g,h,i)perylene	0.26	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Chrysene	1.9	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Fluorene	1900	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Naphthalene	100	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenanthrene	1100	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Pyrene	130	ND (0.1)	ND (0.1)	ND (0.1)	0.02 J (0.1)	0.03 J (0.1)
Metals						
Lead	5	1.609 (1)	0.4309 J (1)	ND (1)	0.8006 J (1)	2.074 (1)

Notes:

1 All concentrations reported in ug/L (ppb); detection limits in parentheses.

2 No concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Groundwater MSC.

3 Based on the evidence demonstrating that the standing water in Tank Group 07A is in connection with groundwater, the surface water results were compared to the applicable groundwater MSCs.

Abbreviations:

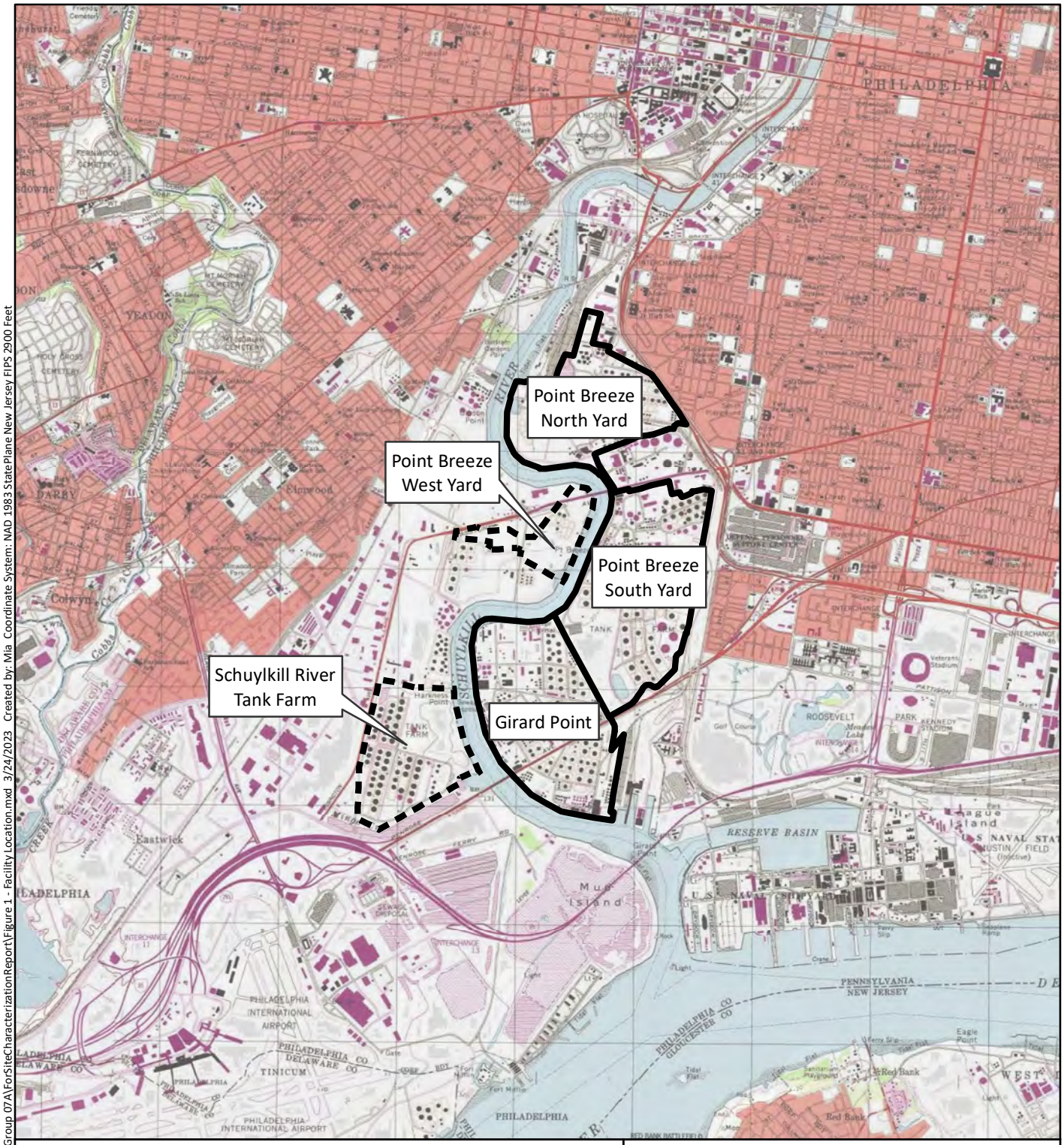
ND - Not Detected

J - Estimated Concentration

Figures

1 Figure 1 Facility Location

2 Figure 2 Soil, Groundwater, and Surface Water Sampling Locations



0 2,000 4,000 6,000 Feet

1 inch = 4,000 feet

N

Legend

Subject to AST Closure Plan

Not Subject to AST Closure Plan

Base Map: USGS Philadelphia 1994 7.5 Minute Quadrangle.

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Facility Location

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07A\ForSiteCharacterizationReport\Figure 1 - Facility Location.mxd 3/24/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane New Jersey FIPS 2900 Feet

Note:
Aerial imagery source: TPI (December 12, 2023)

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	Aboveground Storage Tank Closure
PROJECT NUMBER:	P044.001.002

Soil, Groundwater, and Surface Water Sampling Locations

Figure 2

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07A\ForClosureReportLetter\Figure 2 - Soil, Groundwater, and Surface Water Sampling Locations.mxd 2/19/2024 Created by: M.Civitillo Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Appendix A

Tank Registration Amendment Forms

JD2 Environmental Inc.
800 East Washington Street • West Chester, PA 19380 • 610.430.8151 • 610.430.8016 Fax • www.jd2env.com

October 28, 2021

VIA EMAIL (ELECTRONIC SUBMISSION)

Pennsylvania Department of Environmental Protection
Central Office - Division of Storage Tanks
Rachel Carson State Office Building
400 Market Street
Harrisburg, Pennsylvania 17101

Subject: **Philadelphia Energy Solutions Refining and Marketing, LLC (PES)**
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 - Girard Point Refinery

Dear PADEP:

On behalf of our client, JD2 Environmental, Inc. (JD2) is attaching the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tanks Registration/Permitting Application Form for the removal of the following aboveground storage tanks (ASTs):

Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Refinery	51-33624	019A	GP 250	P-009	9/29/2021
Girard Point Refinery	51-33624	020A	GP 251	P-010	9/29/2021

If you have any questions regarding this submittal, please do not hesitate to contact me at (610) 430-8151.

Sincerely yours,

JD2 ENVIRONMENTAL, INC.

Kristian Satterthwaite

Kristian Satterthwaite
Environmental Scientist
PADEP Inspector #5081

KS:wc
Attachment

cc: REPSG

2630-PM-BECB0514 Rev. 6/2019

Form pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

51-33624
Facility ID #

Phila Ref Girard Point
Facility Name

DEP USE ONLY
Client ID#
Site ID#
Account #
Auth ID#
APS ID#
Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P.	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 West Passyunk Avenue				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19145	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P.	Sr.	
Client Contact Title		**Phone**	**Ext**	
President		610-636-4574		
E-mail Address			**FAX**	
Gbowman@northstar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
019A	T	R	F	01/01/1939	09/29/2021	3,045,000		Light Cycle Oil		
020A	T	R	F	01/01/1939	09/29/2021	3,045,000		Untreated Distillate		
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 019A	Tank # 020A	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☒	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	11/01/2021

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P.	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
Gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
019A	Kristian Satterthwaite		5081	AFR	1557	Kristian Satterthwaite	10/26/21
020A	Kristian Satterthwaite		5081	AFR	1557	Kristian Satterthwaite	10/26/21

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

Appendix B

Aboveground Storage Tank System Closure Report Forms

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

51-33624
Facility I.D.

Former Philadelphia Refinery Point Breeze - Tank Group 7A
Facility Name

Philadelphia	Philadelphia
Municipality	County

January 22, 2024
Date Prepared

Kevin L. Long
Name of Person Submitting Report
(Please Print)

Terraphase Engineering
Company Name
(If Applicable)

Principal Consultant
Title

Closure Method (Check all that apply):

- ☒ AST Removal
- ☐ AST Closure-In-Place
- ☐ AST Change-In-Service

Site Assessment Results (Check all that apply):

- ☒ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☐ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Extensive Contamination

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

DATE RECEIVED: _____

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing aboveground storage tank systems may use this form to demonstrate that a storage tank system closure was performed in accordance with technical guidance document 263-4200-001 "Closure Requirements for Aboveground Storage Tank Systems". PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 51-33624
2. Facility Name Former Philadelphia Refinery Point Breeze - Tank Group 7A
3. Facility County Philadelphia
4. Facility Municipality Philadelphia
5. Facility Address 3144 West Passyunk Avenue
6. Facility Contact Person Anne R. Garr
7. Facility Telephone Number (312) 796-6564
8. Owner Name Philadelphia Energy Solutions Refining and Marketing LLC
9. Owner Mailing Address 111 S. Wacker Dr., Ste 3000
10. Description of Aboveground Storage Tank Systems (Complete for each tank system closed)

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		9- 29 -2021	9- 29 -2021	- -	- -
Description of Aboveground Storage Tank System (Complete for each tank system undergoing closure)					
DEP Tank ID Number		019A	020A		
Total Capacity (Gallons)		3,045,000	3,045,000		
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Pure Ethanol	☐	☐	☐	☐
	Blended Ethanol _____%	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Biodiesel _____%	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Nonpetroleum Oil, Specify				
	Other, Specify	Light Cylce Oil	Distillate, Untreated		
NOTE: If Hazardous Substance Block is Checked, Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance AND Chemical Abstract Service (CAS) No.				
	c. Unknown	☐	☐	☐	☐

CLOSURE METHOD(s): DEP Tank ID Number:		019A	020A		
Partial Storage Tank System Closure		☐	☐	☐	☐
Tank ☐ N/A	a. Removal	☒	☒	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Piping ☐ N/A	a. Removal	☒	☒	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Dispenser ☒ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Other _____	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐

Describe Closure Activities:

The tanks and associated piping were evacuated of any sale-able product, which was consolidated / bulked and eventually sold. All materials were either transferred to a slop oil tank through existing piping at the facility or via vacuum truck. When feasible the lines were drained back to the tank, and any product removed using a vacuum truck and stored with the other bulked products for future sale. The associated piping was then cleaned using copious amounts of water, high pressure water and /or purged with air or an inert gas such as nitrogen. Some heavy oil lines were flushed using cutter stock before using water. When required, a thermal Oxidizer was utilized to reduce the LEL inside the tank prior to opening and performing Confined Space Entry for cleaning. When necessary or prudent tanks and/or piping were also purged by pulling the internal atmosphere through activated carbon. Once the piping was cleaned, verification was conducted via a physical walk-down of the system, and painting valves and piping green as each was confirmed to be open and empty. The piping and utilities were then air gapped by the mechanical contractor (Nooter). Air gapping was followed by the simultaneous removal of the piping system and the cleaning the interior of the tank. Interior cleaning was conducted by one of three subcontracted industrial services companies (ACV Enviro, MPW, EISCO) and included when necessary the removal of floating roof seals (EFR/IFR). Pontoons were also inspected prior to demolition and if found to contain free product, they were evacuated and the product consolidated with the other like products stored for future sale. All cleaning water and rinsates were collected via vacuum truck and water was decanted at the wash pad leading to the the on-site WWTPs. The remaining sludges and tank bottoms were stabilized with water absorbing polymers and or organic products such as kiln dried sawdust to ensure no free liquids in transit. The material was then loaded into intermodal containers (maximum 24 tons per container and 6 containers per rail car), placed on rail cars. Bills of lading were generated and sent to the railroad to schedule for pickup. The material was managed under 40 CFR 261.4(a)(24) verified recycling exemption and transported by rail to CWM in Sulphur, LA. Upon completion of the cleaning process the tanks and any remaining piping were dismantled, loaded into scrap recycling trucks and/or containers weighed at the facility scale and transported to a local scrap recycling company.

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of the storage tank systems:**

    Tank Group 07A was located in the south-central portion of the Former Philadelphia Refinery Complex. The tanks in the group held a variety of materials associated with the petroleum refining process.

☒ ☐ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ ☐ 13. Original, color photographs of the closure process involving any excavation are attached (i.e., inside of excavation/piping runs, pit water, containment structure and foundation showing condition).

☒ ☐ 14. An amended "Storage Tanks Registration/Permitting Application" Form was submitted to the DEP, Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: 10 / 4 / 2021

☐ ☒ 15. If a release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: ___/____/_____ Office: _____

Yes	N/A	
☒	☐	16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable product was drained from the tanks prior to cleaning and transferred to other on-site storage tanks. The useable product was consolidated and sold. Any residual product was discharged to the on-site process sewer and wastewater treatment system.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
All tank bottoms to include sediments, sludges containing recoverable oil were managed in accordance with 40 CFR261.4(a)24. When shipped by rail to CWM in Sulphur, LA, the material was solidified using organic agents such as kilndried sawdust to ensure no free liquid during trasnsit, then placed into Inter-modal containers, loaded onto railcars, properly placarded and BOL's were generated and provided to the railroad. When transported to SAREX in West Deptford, NJ, the material was transporterd via vacuum truck and managed under the same exemption 40 CFR 261.4(a)(24). Any wastewater generated from cleaning was treated through the onsite waste water treatment plants (NPDES Permit #s 0012629 (Point Breeze) and 0011533 (Girard Point). Generator ID # PAD 0497910-98.

c. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: PAD 04979109

(2) Licensed Hazardous Waste Transporter Name and ID Number: Dana Transport, HW ID #40106; Chemical Waste Management - LA 0000777201, BNSF Railway Company - LA 000147272

☐	☒	17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning:

b. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

_____

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
All tanks and associated piping were cleaned, demolished and recycled for scrap value. Pipe and tank scrap was not segregated for transportation to the scrap facility; therefore, a specific quantity of piping or, tank scrap was not detailed in disposal documentation.

☐ ☒ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount _____ (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

Yes **N/A**

☐ ☒ 20. Briefly describe the disposition of and amount _____ (tons) of uncontaminated soil and debris (attach analyses):

☐ ☒ 21. If the tanks were "Closed-in-Place" provide information below:

a. Briefly describe the tank cleaning process: _____

b. If subcontracted, name and address of company that performed the tank cleaning:

c. How were tanks marked/labeled with permanent closure date: _____

I, Philadelphia Energy Solutions Refining And Marketing LLC (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the owner of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Signature of Tank Owner

2 / 7 / 2024
Date

Philadelphia Energy Solutions Refining And Marketing LLC

Company Name
(If applicable)

Anne R. Garr, Assistant Secretary

Title

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 51 - 33624
DEP Tank ID Number(s) 019A, 020A

Yes N/A

1. Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil and debris:

   Removed tank and piping debris was segregated and loaded into roll-off containers during demolition. Soil excavation was not completed at the time of AST removal.

2. Briefly describe the method of piping system closure and the closure of the piping systems including the quantity and condition of the piping:

   All the pertinent tank and piping system locations requiring sampling for closure purposes were documented, cleaned, demolished, and recycled for scrap value. In some cases, air gapping and removal of tank system piping prior to the demo of the tank was conducted. No problems or issues concerning the condition of the piping systems were reported.

3. Briefly describe the condition of the tanks and any problems encountered during tank handling or tank removal activities:

   None reported.

4. Briefly describe the method used to purge the tanks of and monitor for hazardous or explosive vapors:

   Vapors were monitored via a LEL meter. The tanks and associated piping were evacuated of any sale-able product and then cleaned using copious amounts of water, high pressure water and /or purged with air or an inert gas such as nitrogen. Some heavy oil lines were flushed using cutter stock before using water. When required, a thermal oxidizer was utilized to reduce the LEL inside the tank prior to opening and performing Confined Space Entry for cleaning. When necessary or prudent tanks and/or piping were also purged by pulling the internal atmosphere through activated carbon.

☒ ☐ 5. If tanks were cleaned on-site:

   a. Briefly describe the tank cleaning process: The subcontracted companies used to clean tanks were ACV ENVIRO, EISCO, and MPW. Tanks were drained, cut open, rinsed and scrubbed clean of any residuals before demolition. See additional detail on page 3.

   b. If subcontracted, name and address of company that performed the tank cleaning:

      NorthStar Contracting Group, Inc., 2250 East Adams Avenue, Philadelphia, PA 19124
      ACV Enviro, 2527 Market Street, Aston PA 19014
      EISCO, 288 Oak Grove Road, Swedesboro, NJ 08085
      MPW, 9711 Lancaster Road SE, Hebron, OH 43025

☐ ☒ 6. If tanks were “Closed-in-Place”, briefly describe how tanks were rendered inoperative, marked permanently closed with date, vented and secured to prevent unauthorized entry:

☐ ☒ 7. If contamination was suspected or observed, the "Notification of Contamination" form was submitted.

I, Kristian Satterthwaite (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the certified remover who performed the tank handling activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Kristian Satterthwaite
Signature of Certified Remover

1 / 31 / 2024
Date

#5081
Remover Certification Number

#1557
Company Certification Number

JD2 Environmental, Inc.
Company Name

800 East Washington Street
Street

West Chester, PA 19380
City/Town, State, Zip

(610) 430-8151
Phone

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 019A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 1 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ------→ Conduct confirmatory sampling ------→ See end of this section for options on submission and maintenance of closure records ------→ Do not complete item C.2. below.

☐ YES ------→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment

01/25/2024
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

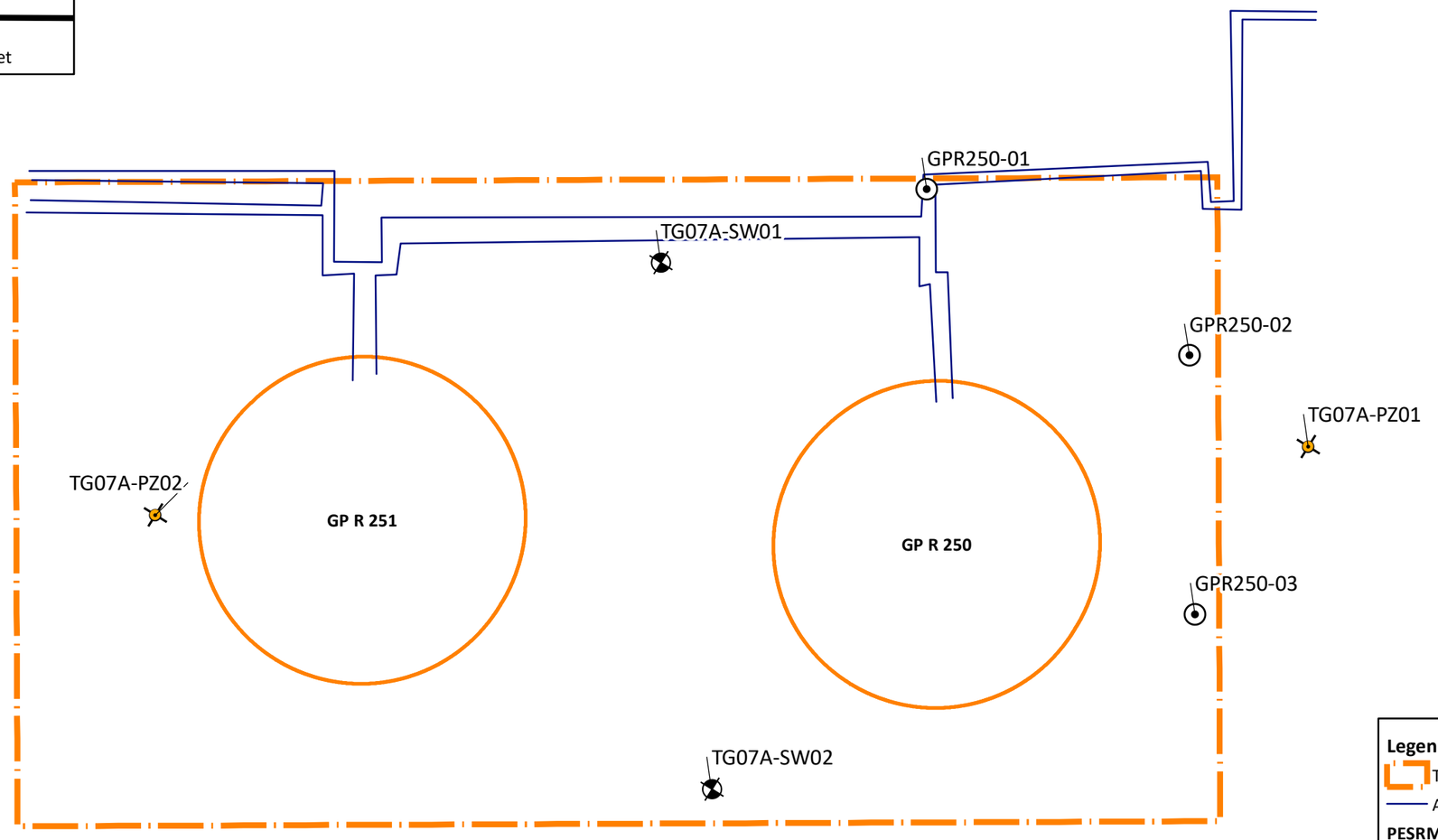
Table 1 - 019A (GP R 250)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR250-01	GPR250-01-SS01	2.5	3	Benzo(b)fluoranthene	SW8270E	Soil	0.58	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Lead	SW6010D	Soil	350	2.35	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Pyrene	SW8270E	Soil	0.55	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Phenanthrene	SW8270E	Soil	0.24	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Naphthalene	SW8270E	Soil	0.19	0.04	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Fluorene	SW8270E	Soil	0.021	0.2	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270E	Soil	0.3	0.16	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Benzo(a)pyrene	SW8270E	Soil	0.45	0.16	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Benzo(a)anthracene	SW8270E	Soil	0.37	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	Anthracene	SW8270E	Soil	0.11	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	1,2-Dichloroethane	SW8260D	Soil	ND	0.00084	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Chrysene	SW8270E	Soil	0.42	0.12	12/15/2023	12/19/2023
GPR250-01	GPR250-01-SS01	2.5	3	1,2-Dibromoethane	SW8260D	Soil	ND	0.00042	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Xylenes (total)	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Benzene	SW8260D	Soil	0.00028	0.00042	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Cumene	SW8260D	Soil	ND	0.00084	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Ethyl Benzene	SW8260D	Soil	ND	0.00084	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	Toluene	SW8260D	Soil	ND	0.00084	12/15/2023	12/20/2023
GPR250-01	GPR250-01-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00038	0.0017	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Xylenes (total)	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270E	Soil	0.038	0.16	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Pyrene	SW8270E	Soil	0.045	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Phenanthrene	SW8270E	Soil	0.028	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Naphthalene	SW8270E	Soil	ND	0.039	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Chrysene	SW8270E	Soil	0.039	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Benzo(b)fluoranthene	SW8270E	Soil	0.058	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Benzo(a)pyrene	SW8270E	Soil	ND	0.16	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Benzo(a)anthracene	SW8270E	Soil	0.032	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Anthracene	SW8270E	Soil	ND	0.12	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	1,2-Dibromoethane	SW8260D	Soil	ND	0.00046	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Fluorene	SW8270E	Soil	ND	0.2	12/15/2023	12/19/2023
GPR250-02	GPR250-02-SS01	1.5	2	Toluene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	1,2-Dichloroethane	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Lead	SW6010D	Soil	36.3	2.24	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Benzene	SW8260D	Soil	ND	0.00046	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Cumene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Ethyl Benzene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR250-02	GPR250-02-SS01	1.5	2	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Pyrene	SW8270E	Soil	0.48	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Toluene	SW8260D	Soil	ND	0.00093	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Naphthalene	SW8270E	Soil	ND	0.04	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Fluorene	SW8270E	Soil	ND	0.2	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Chrysene	SW8270E	Soil	0.28	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.14	0.16	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Benzo(b)fluoranthene	SW8270E	Soil	0.31	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Benzo(a)pyrene	SW8270E	Soil	0.27	0.16	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Benzo(a)anthracene	SW8270E	Soil	0.28	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Phenanthrene	SW8270E	Soil	0.28	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00046	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Anthracene	SW8270E	Soil	0.057	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01	2	2.5	Xylenes (total)	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00093	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Benzene	SW8260D	Soil	ND	0.00046	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Cumene	SW8260D	Soil	ND	0.00093	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Ethyl Benzene	SW8260D	Soil	ND	0.00093	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01	2	2.5	Lead	SW6010D	Soil	19.8	2.36	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Anthracene	SW8270E	Soil	ND	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Benzo(a)anthracene	SW8270E	Soil	0.035	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Benzo(a)pyrene	SW8270E	Soil	ND	0.16	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Benzo(b)fluoranthene	SW8270E	Soil	0.042	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Benzo(g,h,i)perylene	SW8270E	Soil	ND	0.16	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Chrysene	SW8270E	Soil	0.038	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Fluorene	SW8270E	Soil	ND	0.2	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Naphthalene	SW8270E	Soil	ND	0.039	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Pyrene	SW8270E	Soil	0.069	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Phenanthrene	SW8270E	Soil	0.056	0.12	12/15/2023	12/19/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Lead	SW6010D	Soil	17.2	2.31	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Xylenes (total)	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00048	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00097	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Cumene	SW8260D	Soil	ND	0.00097	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Benzene	SW8260D	Soil	ND	0.00048	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Ethyl Benzene	SW8260D	Soil	ND	0.00097	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR250-03	GPR250-03-SS01D	2	2.5	Toluene	SW8260D	Soil	ND	0.00097	12/15/2023	12/20/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Lead	SW6020B	Groundwater	0.001609	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/22/2023

Table 1 - 019A (GP R 250)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Lead	SW6020B	Groundwater	0.0004309	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/22/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Lead	SW6020B	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	0.00001	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Pyrene	SW8270ESIM	Groundwater	0.00002	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Lead	SW6020B	Groundwater	0.0008006	0.001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Cumene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	0.00002	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzene	SW8260D	Groundwater	0.0002	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Lead	SW6020B	Groundwater	0.002074	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Pyrene	SW8270ESIM	Groundwater	0.00003	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Cumene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023

Notes:
D - Duplicate
SS -- Soil Sample
SW -- Surface Water
PZ -- Piezometer



Legend

- Tank Group 07 Boundary
- Associated Piping

PESRM Sample Location

- Soil
- Surface Water Sample
- Piezometer

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	Aboveground Storage Tank Closure
PROJECT NUMBER:	P044.001.002

Site Location and Sampling Map 019A (GP R 250)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07A\ForASTClosureReport\Figure 1 - 019A GP R 250.mxd 1/5/2024 Created by: M.Civitillo Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 019A (GP R 250) during demolition.

Photograph 2:

View of soils beneath Tank 019A (GP R 250) after demolition.

Product Movement and Waste Disposal Documentation (Tank 019A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#5120103

Load Ticket: 16165

Date: 09 24 21

Scrap

Sold to: Allegheny

Location: TAWTSO

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 70960 lbs

Tare Weight: 41660 lbs

Net Weight: 29360 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20030415
Date: 09/24/2021 7:16 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 63842.216
Loads: 4260

DT260-50 - TRUCK 260 W/ TRAILER 50
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	14.68 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	70960.00	41600.00	29360.00

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ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 020A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 1 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment

2 / 9 / 24
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

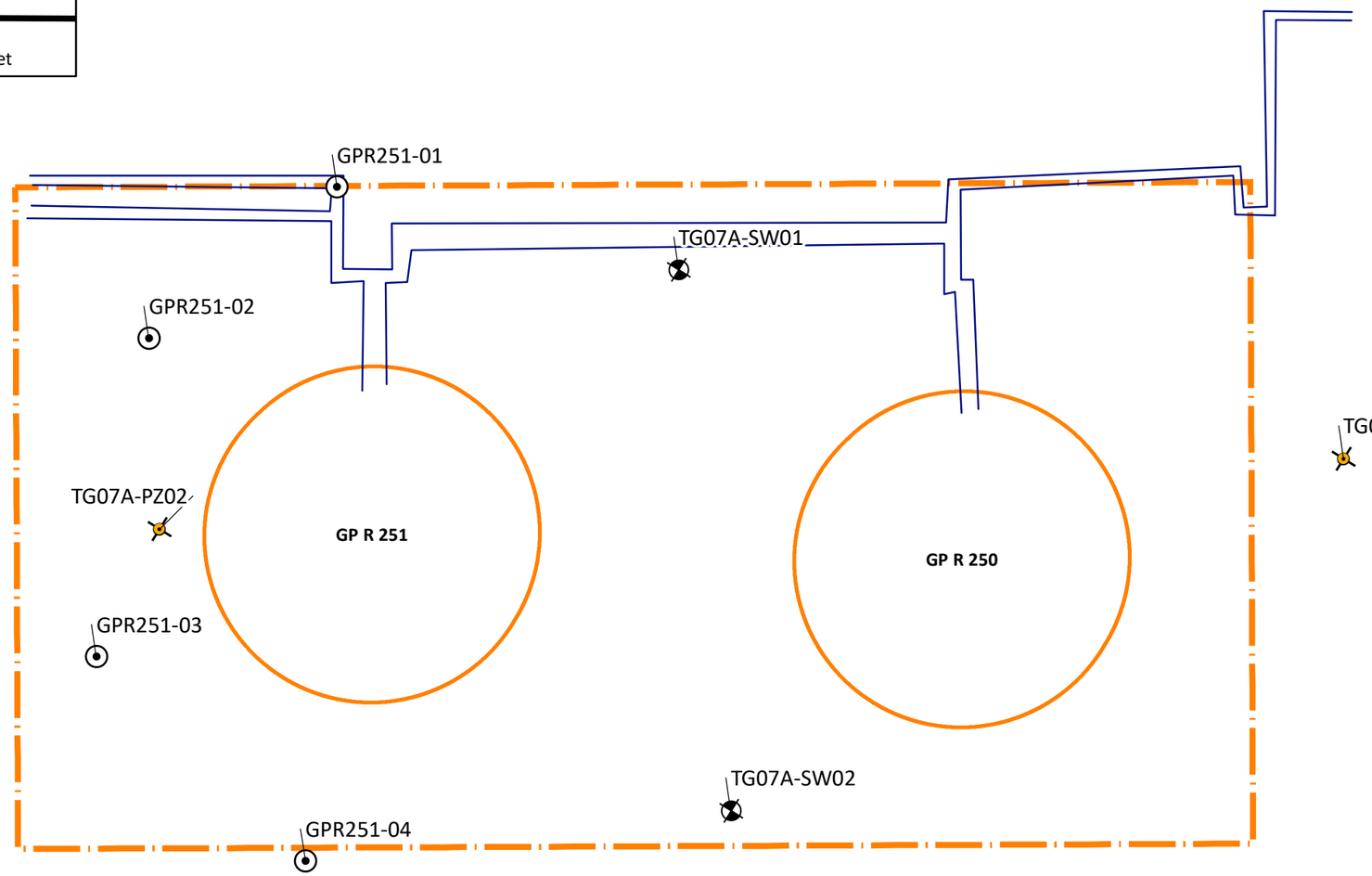
Table 1 - 020A (GP R 251)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR251-01	GPR251-01-SS01	0	0.5	Toluene	SW8260D	Soil	ND	0.00085	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Xylenes (total)	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Naphthalene	SW8270E	Soil	ND	0.039	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Fluorene	SW8270E	Soil	ND	0.19	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Chrysene	SW8270E	Soil	0.077	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.043	0.16	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Benzo(b)fluoranthene	SW8270E	Soil	0.093	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Benzo(a)pyrene	SW8270E	Soil	0.081	0.16	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Benzo(a)anthracene	SW8270E	Soil	0.078	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Phenanthrene	SW8270E	Soil	0.092	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Anthracene	SW8270E	Soil	ND	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	Lead	SW6010D	Soil	38	2.29	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Pyrene	SW8270E	Soil	0.13	0.12	12/15/2023	12/19/2023
GPR251-01	GPR251-01-SS01	0	0.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00042	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00085	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Benzene	SW8260D	Soil	ND	0.00042	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Cumene	SW8260D	Soil	ND	0.00085	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Ethyl Benzene	SW8260D	Soil	ND	0.00085	12/15/2023	12/20/2023
GPR251-01	GPR251-01-SS01	0	0.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0017	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Anthracene	SW8270E	Soil	ND	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Pyrene	SW8270E	Soil	0.033	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Naphthalene	SW8270E	Soil	ND	0.037	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Fluorene	SW8270E	Soil	ND	0.19	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Chrysene	SW8270E	Soil	0.022	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270E	Soil	ND	0.15	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Benzo(b)fluoranthene	SW8270E	Soil	ND	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Benzo(a)pyrene	SW8270E	Soil	ND	0.15	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Benzo(a)anthracene	SW8270E	Soil	0.022	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Phenanthrene	SW8270E	Soil	ND	0.11	12/15/2023	12/19/2023
GPR251-02	GPR251-02-SS01	3	3.5	Lead	SW6010D	Soil	21.8	2.28	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Toluene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Ethyl Benzene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Cumene	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Benzene	SW8260D	Soil	ND	0.00045	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00091	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00045	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	Xylenes (total)	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR251-02	GPR251-02-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Ethyl Benzene	SW8260D	Soil	ND	0.00094	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Cumene	SW8260D	Soil	ND	0.00094	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Benzene	SW8260D	Soil	ND	0.00047	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	1,2-Dichloroethane	SW8260D	Soil	ND	0.00094	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	1,2-Dibromoethane	SW8260D	Soil	ND	0.00047	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Anthracene	SW8270E	Soil	ND	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Lead	SW6010D	Soil	40.1	2.32	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Phenanthrene	SW8270E	Soil	0.046	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Pyrene	SW8270E	Soil	0.077	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Naphthalene	SW8270E	Soil	0.035	0.039	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Fluorene	SW8270E	Soil	ND	0.2	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Chrysene	SW8270E	Soil	0.063	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Benzo(b)fluoranthene	SW8270E	Soil	0.084	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Benzo(a)pyrene	SW8270E	Soil	0.076	0.16	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Benzo(a)anthracene	SW8270E	Soil	0.06	0.12	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Xylenes (total)	SW8260D	Soil	ND	0.0019	12/15/2023	12/20/2023
GPR251-03	GPR251-03-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270E	Soil	0.044	0.16	12/15/2023	12/19/2023
GPR251-03	GPR251-03-SS01	2.5	3	Toluene	SW8260D	Soil	ND	0.00094	12/15/2023	12/20/2023
GPR251-04	GPR251-04-SS01	1	1.5	Pyrene	SW8270E	Soil	0.2	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Benzo(a)anthracene	SW8270E	Soil	0.15	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Benzo(a)pyrene	SW8270E	Soil	0.21	0.17	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Benzo(b)fluoranthene	SW8270E	Soil	0.23	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.13	0.17	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Chrysene	SW8270E	Soil	0.17	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Naphthalene	SW8270E	Soil	0.18	0.043	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Anthracene	SW8270E	Soil	ND	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Phenanthrene	SW8270E	Soil	0.12	0.13	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	Fluorene	SW8270E	Soil	ND	0.22	12/15/2023	12/19/2023
GPR251-04	GPR251-04-SS01	1	1.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0022	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Toluene	SW8260D	Soil	ND	0.0011	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0022	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Ethyl Benzene	SW8260D	Soil	ND	0.0011	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Cumene	SW8260D	Soil	ND	0.0011	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Benzene	SW8260D	Soil	ND	0.00054	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0022	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0011	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00054	12/15/2023	12/21/2023
GPR251-04	GPR251-04-SS01	1	1.5	Lead	SW6010D	Soil	66.7	2.63	12/15/2023	12/20/2023
GPR251-04	GPR251-04-SS01	1	1.5	Xylenes (total)	SW8260D	Soil	ND	0.0022	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Lead	SW6020B	Groundwater	0.001609	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/22/2023

Table 1 - 020A (GP R 251)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Lead	SW6020B	Groundwater	0.0004309	0.001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/22/2023
TG07A-PZ01	TG07A-PZ01-231215D	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/22/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Lead	SW6020B	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Cumene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-PZ02	TG07A-PZ02-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	0.00001	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Pyrene	SW8270ESIM	Groundwater	0.00002	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Benzene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Lead	SW6020B	Groundwater	0.0008006	0.001	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Cumene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023
TG07A-SW01	TG07A-SW01-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Phenanthrene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(a)anthracene	SW8270ESIM	Groundwater	ND	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(a)pyrene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(b)fluoranthene	SW8270ESIM	Groundwater	0.00002	0.00005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzo(g,h,i)perylene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Chrysene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Anthracene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Naphthalene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,3,5-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Fluorene	SW8270ESIM	Groundwater	ND	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Xylenes (total)	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Toluene	SW8260D	Groundwater	ND	0.00075	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Methyl tert-butyl ether	SW8260D	Groundwater	ND	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Ethyl Benzene	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Benzene	SW8260D	Groundwater	0.0002	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2-Dichloroethane	SW8260D	Groundwater	ND	0.0005	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2,4-Trimethylbenzene	SW8260D	Groundwater	ND	0.0025	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	1,2-Dibromoethane	SW8011	Groundwater	ND	0.00001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Lead	SW6020B	Groundwater	0.002074	0.001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Pyrene	SW8270ESIM	Groundwater	0.00003	0.0001	12/15/2023	12/21/2023
TG07A-SW02	TG07A-SW02-231215	--	--	Cumene	SW8260D	Groundwater	0.00019	0.0005	12/15/2023	12/21/2023

Notes:
D - Duplicate
SS -- Soil Sample
SW -- Surface Water
PZ -- Piezometer



Legend

- Tank Group 07 Boundary
- Associated Piping

PESRM Sample Location

- Soil
- Surface Water Sample
- Piezometer

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	Aboveground Storage Tank Closure
PROJECT NUMBER:	P044.001.002

Site Location and Sampling Map 020A (GP R 251)

Figure 2

File: N:\GIS\Pr\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07A\ForASTClosureReport\Figure 2 - 020A GP R 251.mxd 1/5/2024 Created by: M.Civitillo Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 020A (GP R 251) during demolition.

Photograph 2:

View Tank 020A (GP R 251) pipng prior to demolition.

Photograph 3:

View of Tank 020A (GP R 251) during demolition.

Product Movement and Waste Disposal Documentation (Tank 020A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#S120103

Load Ticket: 16139

Date: 09-23-21

Scrap

Sold to: Allegheny

Location: Tank 251

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 67760 lbs

Tare Weight: 42400 lbs

Net Weight: 25360 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20030389
Date: 09/23/2021 9:23 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 63420.856
Loads: 4234

DT327-1109 - ALLEGHENY TRUCK 327-1109
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	10.18 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	62760.00	42400.00	20360.00

16139
THE MONSTER
by
TRAILERS

Product Movement and Waste Disposal Documentation (Tank Group 07A)

Date	From Tank #	Product Qty. (gal)	Transferred To Tank #	Product
791				
10/21/2020	GP 791	0	N/A	Benzene
798				
10/21/2020	GP 798	0	N/A	Benzene
250				
10/9/2020	GP 250	7,046	PB 219	Untreated Distillate
7/7/2021	Tank 250	3,200	Tank 843	NA
8/16/2021	Tank 250/251	2,000	Tank 219	Oil/Water
251				
8/26/2020	GP 251	7,046	PB 219	Untreated Distillate
8/16/2021	Tank 250/251	2,000	Tank 219	Oil/Water
9/10/2021	Tank 251	3,000	Wash Pad	Oil/Water
9/10/2021	Tank 251	3,000	Wash Pad	NA
9/10/2021	Tank 251	3,000	Wash Pad	Water
9/10/2021	Tank 251	3,000	Wash Pad	Water/Oil
9/10/2021	Tank 251	3,000	Tank 219	Oil
494				
6/28/2021	Tank 494	2,800	843	Oil
6/28/2021	Tank 494	2,800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/29/2021	Tank 494	3000	219	Oil/Water
6/29/2021	Tank 137 & 494	3000	843	Water/Oil
6/29/2021	Tank 137 & 494	3000	219	Oil/Water
7/2/2021	Tank 494	3000	843	Heavy Oil
7/2/2021	Tank 494	2500	843	Recovery Oil and Water
7/2/2021	Tank 494	3000	843	Oil
7/2/2021	Tank 494	3000	Tank 843	Heavy Oil
7/2/2021	Tank 494	2500	Tank 843	Recover Oil/Water
7/2/2021	Tank 494	3000	Tank 843	Oil
7/16/2021	Tank 494	300	Tank 843	Flush
790				
10/21/2020	Tank 790	0	N/A	Benzene
792				
10/21/2020	Tank 792	0	N/A	Cumene
793				
10/21/2020	Tank 793	0	N/A	Cumene
794				
11/6/2020	Tank 794	11927.09375	TK# 796 and totes	Solvent (glycol)
799				
10/16/2020	Tank 799	305.8229167	PB 191	Benzene
767				
11/16/2020	Tank 767	1761.54	PB 191	Recovered Oil

TG07A

Disposition of residual Liquid/ Tank Bottoms

Tank #	Primary Product	Reg. #	AMS #	Temp Out of Service or CIP Date	Removal Date	HSM Ship Date	Sold as Product	Remarks
GP 250	LCO	019A	P-009	10/9/2020	9/29/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 251	Distillate, Untreated	020A	P-010	8/26/2020	9/29/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 494	Main Frac Bottoms	029A	P-039	T -9/17/2021	4/14/2022	Yes	N/A	Multiple Shipping Dates Managed as HSM and shipped by Rail to WM (see Shipment #'s 11 thru 15)
GP 767	Recovered Oil	046A	P-135	T - 11/16/2020	7/8/2022	N/A	N/A	Tank had approx. 1800 gallons of product that was transferred to PB 191 and subsequently sold and shipped by barge - sludge stablized and shipped by Rail to WM (see Shipment #11)
GP 790	Benzene	034A	P-017	T-11/04/2019	2/21/2020	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 791	Benzene	006A	P-018	T-11/04/2019	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 792	Cumene	035A	P-019	T - 4/22/2020	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 793	Cumene	036A	P-020	T - 4/24/2020	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 794	Tetraethylene Glycol	037A	P-153	T - 11/6/2020	2/21/2022	N/A	Yes	Direct load to tank truck and sold to PBF - Residuals product was transferred after sale to 796 / washwater and residuals were fed to the GP WWTP to augment
GP 795	Benzene	N/A	P-021	T- 7/24/2009	2/21/2022	N/A	Yes	Flow Thru Oprocess Tank Exempt from PADEP Registration Tank
GP 796	Spent Tetraethylene Glycol	038A	P-154	T- 8/26/2021	8/26/2021	N/A	N/A	Tank was RCRA Empty - Residual material and washwater were Drained to the GP WWTP to augment dwindling food source
GP 798	Benzene	007A	P-022	T - 11/22/2019	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 799	Benzene	039A	P-023	T - 8/3/2017	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 1088	*Fresh Caustic	033A	N/A	T - 10/15/2021	7/8/2022	N/A	Yes	Consolidated with other fresh Caustic into GP 973 and Sold to PBF Wash Water was drained at the bundle pad (BOL's to be posted)
GP 1116	Udex feed	030A	P-001	T- 12/19/2019	10/4/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP1117	Udex feed	005A	P-024	T- 2/6/2014	10/4/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5388	Tank 219	76,500	27,700	**24.40**	**25.16**	91047	A	**0.4**
5166	Tank 219	76,600	27,800	**24.40**	**24.88**	91047	B	**0.4**
5143	Tank 219	76,600	27,800	**24.40**	**25.21**	91047	C	**0.4**
5365	Tank 227	76,400	27,650	**24.38**	**24.91**	91047	D	**0.4**
5203	Tank 227	76,300	27,800	**24.25**	**24.77**	91047	E	**0.3**
5056	Tank 227	76,450	27,800	**24.33**	**24.95**	91047	F	**0.3**
				146.15	**149.88**			**2**
		Running Total (tons)		**11,305.21**	**11,363.13**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5217	Tank 843	76,350	27,900	**24.23**	**24.22**	91150	A	**0.2**
5141	Tank 843	76,600	27,900	**24.35**	**24.52**	91150	B	**0.4**
5339	Tank 843	76,700	27,600	**24.55**	**24.05**	91150	C	**0.6**
5075	Tank 843	76,500	27,800	**24.35**	**24.23**	91150	D	**0.4**
5321	Tank 843	76,050	27,650	**24.20**	**24.21**	91150	E	**0.2**
5225	Tank 843	76,300	27,650	**24.33**	**24.18**	91150	F	**0.3**
5085	Tank 843	76,100	27,750	**24.18**	**24.18**	91141	A	**0.2**
5109	Tank 843	76,600	27,850	**24.38**	**24.37**	91141	B	**0.4**
5284	Tank 843	76,500	27,800	**24.35**	**24.36**	91141	C	**0.4**
5239	Tank 843	76,750	28,200	**24.28**	**24.38**	91141	D	**0.3**
5242	Tank 843	77,100	28,350	**24.38**	**24.39**	91141	E	**0.4**
5257	Tank 843	76,400	28,100	**24.15**	**24.03**	91141	F	**0.1**
5356	Tank 843	75,950	27,600	**24.18**	**24.07**	91494	A	**0.2**
5793	Tank 843	76,400	27,700	**24.35**	**24.36**	91494	B	**0.4**
5215	Tank 843	76,650	27,750	**24.45**	**24.49**	91494	C	**0.4**
5269	Tank 843	76,750	27,950	**24.40**	**24.38**	91494	D	**0.4**
5307	Tank 843	76,550	27,750	**24.40**	**24.34**	91494	E	**0.4**
5228	Tank 843	76,050	27,800	**24.13**	**24.23**	91494	F	**0.1**
				437.60	**436.99**			**6**
		Running Total (tons)		**11,742.81**	**11,800.12**			

		Weight					
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position
5146	Tank 843	76,100	28,000	**24.05**	**24.20**	91063	A
5133	Tank 843	76,600	27,800	**24.40**	**24.50**	91063	B
5334	Tank 843	76,350	27,750	**24.30**	**24.05**	91063	C
5322	Tank 843	76,150	27,700	**24.23**	**22.83**	91063	D
5052	Tank 843	76,350	27,800	**24.28**	**24.25**	91063	E
5243	Tank 843	68,450	28,100	**20.18**	**20.19**	91063	F
5190	Tank 843	70,750	27,750	**21.50**	**21.27**	91133	A
5295	Tank 843	72,050	27,950	**22.05**	**21.97**	91133	B
5291	Tank 843	75,600	27,850	**23.88**	**23.77**	91133	C
5042	Tank 843	73,150	27,750	**22.70**	**21.71**	91133	D
5267	Tank 843	69,650	27,950	**20.85**	**20.87**	91133	E
5233	Tank 843	70,300	28,000	**21.15**	**20.86**	91133	F
5337	Tank 843	70,750	27,800	**21.48**	**20.79**	91085	A
5395	Tank 843	74,450	27,650	**23.40**	**24.80**	91085	B
5360	Tank 843	76,550	27,900	**24.33**	**24.32**	91085	C
5383	Tank 843	75,850	27,600	**24.13**	**24.21**	91085	D
5272	Tank 843	76,850	28,050	**24.40**	**24.24**	91085	E
5211	Tank 843	76,750	27,950	**24.40**	**24.45**	91085	F
				415.68	**413.28**		
		Running Total (tons)		**12,158.49**	**12,213.40**		

Over/Under
0.1
0.4
0.3
0.2
0.3
-3.8
-2.5
-2.0
-0.1
-1.3
-3.2
-2.9
-2.5
-0.6
0.3
0.1
0.4
0.4
-16

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5198	Tank 843	76,500	28,300	**24.10**	**24.45**	91075	A	**0.1**
5363	Tank 843	76,550	27,900	**24.33**	**24.21**	91075	B	**0.3**
5137	Tank 843	76,500	27,900	**24.30**	**24.22**	91075	C	**0.3**
5237	Tank 843	77,350	28,700	**24.33**	**24.43**	91075	D	**0.3**
5130	Tank 843	76,600	28,000	**24.30**	**24.14**	91075	E	**0.3**
5148	Tank 843	76,650	27,950	**24.35**	**24.58**	91075	F	**0.4**
5077	Tank 843	76,750	28,000	**24.38**	**24.57**	91058	A	**0.4**
2371	Tank 843	76,900	28,100	**24.40**	**24.49**	91058	B	**0.4**
5317	Tank 843	76,800	28,100	**24.35**	**24.32**	91058	C	**0.4**
5110	Tank 843	76,800	28,000	**24.40**	**24.29**	91058	D	**0.4**
5003	Tank 843	77,350	28,550	**24.40**	**24.57**	91058	E	**0.4**
5161	Tank 843	76,300	27,950	**24.18**	**24.12**	91058	F	**0.2**
5304	Tank 843	76,800	28,000	**24.40**	24.45	91475	A	**0.4**
5058	Tank 843	76,700	28,000	**24.35**	24.40	91475	B	**0.4**
5207	Tank 843	76,800	28,000	**24.40**	24.25	91475	C	**0.4**
5180	Tank 843	76,550	27,900	**24.33**	24.33	91475	D	**0.3**
5236	Tank 843	76,950	28,300	**24.33**	24.50	91475	E	**0.3**
5283	Tank 843	77,000	28,200	**24.40**	24.45	91475	F	**0.4**
				438.00	**438.77**			**6**
		Running Total (tons)		**12,596.49**	**12,652.17**			

658875 UU1104-01

Bill of Lading (Page 1 of 2)

764992

91047-2A 3A

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58115	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225388			
		RAIL CAR# EPIX91047		NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs In effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 1-24-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-~~XX~~ 3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 1-24-22	

EPA122-300

TICKET 42

ID 653375
GROSS 85720 lbINBOUND
01:53PM 01/24/2022

OUTBOUND TICKET 42

GROSS 85720 lb RECALLED 85720 G
TARE 35400 lb 35400 T
NET 50320 lb 50320 N

NET 25.16 TON

05:05PM 01/24/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 764992

WEIGHED BY _____

152108 UU11041-00

Bill of Lading (Page 1 of 2)

7041999

DOCUMENT # 91047-2[illegible] 3B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58116	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225166			
		RAIL CAR# EPIX91047			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc — Certification of receipt of materials

Per: Carrie Dubach Date: 1-25-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-2~~B~~XX 3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 1-25-22	

EPA22114

TICKET 8

ID 653168
GROSS 84840 lbINBOUND
08:35AM 01/25/2022

OUTBOUND TICKET 8

GROSS 84840 lb RECALLED 84840 G
TARE 35080 lb 35080 T
NET 49760 lb 49760 N

UCT 24.88 TON

09:53AM 01/25/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 764999

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

91047-XX 3C

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58117	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225143			
		RAIL CAR# EPIX91047			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill! of Lading terms and conditions in the governing classification on the dale of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodleux Date: 1-24-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-~~20~~XX 3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Carr	Date: 1-24-22	

tM4225145

TICKET 17

ID 653375
GROSS 86000 lb INBOUND
02:31AM 01/24/2022

OUTBOUND TICKET 17

GROSS 86000 lb RECALLED 86000 G
TARE 35580 lb 35580 T
NET 50420 lb 50420 N

NET 25.21 TON

02:47PM 01/24/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 26c1978

WEIGHED BY _____

W11047-3W

163504

Bill of Lading (Page 1 of 2)

764925

91047-2[redacted]X 3[redacted]

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58118	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.38	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225365			
		RAIL CAR# EPIX91047			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:	[signature]	Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: 1-24-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-2DX 3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 12/12022	

EPA122536

TICKET 11

TP 653504
GROSS 80240 lb INBOUND
01/24/2022

OUTBOUND TICKET 11

80940 lb RECALLED 80940 G
31120 lb 31120 T
49820 lb 49820 N

24.91 TON

01/24/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 764925

WEIGHED BY _____

053504

091047-3E

Bill of Lading (Page 1 of 2)

764991

91047-2E XX 3E

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58119	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.25	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225203			
		RAIL CAR# EPIX91047			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubosky	Date: 1-24-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-~~2E~~ 3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 1/24/2022	

EPA/2020

TICKET 41

ID 653504
GROSS 80760 lb INBOUND
01:23PM 01/24/2022

INBOUND TICKET 41

GROSS 80760 lb RECALLED
TARE 31220 lb
NET 49540 lb

NET 24.77 TON

T/S 01/24/2022

80760 G
31220 T
49540 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7001991

WEIGHED BY _____

153168

Bill of Lading (Page 1 of 2)

DOCUMENT # 91047-21 3F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
TICKET 58120	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225056			
		RAIL CAR# EPIX91047			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date: 12/23/2021	Per:	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Rubadeau	Date: 1-24-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91047-~~XX~~ 3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	1-24-22

EPA 223016

TICKET 37

ID 653168
GROSS 84960 lb INBOUND
01:10PM 01/24/2022

OUTBOUND TICKET 37

GROSS	84960 lb	RECALLED	84960 G
TARE	35060 lb		35060 T
NET	49900 lb		49900 N

NET 24.95 TON

02:10PM 01/24/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 261987

WEIGHED BY _____

1653004 OOU1150-3A 745625

Bill of Lading (Page 1 of 2)

91150-3A

DOCUMENT #

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 56038

SHIPPER'S INSTRUCTIONS

48,460

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.23	T
		PROFILE: 969843I.A			
		IM CONTAINER# EPIU226217			
		RAIL CAR# EPIX91150			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date:	Per: Luis Castro	Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Kari Darbonne	Date: 2-28-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: joseph connelle	Date: 2/28/2022	

79200 G
30760 T
48440 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

004115D-3B

765624

Bill of Lading (Page 1 of 2)

91150-3B

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 080
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 220-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 56039

SHIPPER'S INSTRUCTIONS

NH

48,700

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225141			
		RAIL CAR# EPIX91150		NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 2/28/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 2-28-22	

82940 G
33900 T
49040 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7165024

WEIGHED BY _____

0553515 0041150-3C TL05-L008

Bill of Lading (Page 1 of 2)

91150-3C

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 698
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 226-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/at 1241 Ticket 56040	

49,100

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.55	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225339			
		RAIL CAR# EPIX91160			
				KJR	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicek Date: 2/08/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 2-28-22	

TICKET 14

ID: 63776
GROSS 82100 lb GROSS
08:49:18 02/28/2008

GROSS TICKET 14

GROSS	82100 lb GROSS	82100 G
TARE	34000 lb	34000 T
NET	48100 lb	48100 N

NET 24.05 ton

10:11:01 02/28/2008

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1110514D8

WEIGHED BY _____

663514 091150-3D 765610

Bill of Lading (Page 1 of 2)

91150-3D

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 56041	

48,700

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225075			
		RAIL CAR# EPIX91150			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date:	Per: Luis Castro	Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Rolinda Spicer	Date: 2/28/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon K Paul	Date:	2-28-20

82600 G
34140 T
48460 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1145610

WEIGHED BY _____

1653804 0091150-3E

Bill of Lading (Page 1 of 2)

7165635

91150-3B

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 56042	

48,400

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.20	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225321			
		RAIL CAR# EPIX91150		NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials	
Per: Belinda Spicer	Date:	2/1/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 090
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 220-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Connelly	Date: 3-1-2022	

CPLW-3041

TICKET 24

ID 653509
GROSS 83620 lb INBOUND
08:46AM 03/01/2022

OUTBOUND TARE 24

GROSS 83620 lb SCALED 83620 G
TARE 35200 lb 35200 T
NET 48420 lb 48420 N

OFF 24.21 TON

DISPOSED 03/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765135

WEIGHED BY _____

1053514 009150-3F 7605626

Bill of Lading (Page 1 of 2)

91150-3F

DOCUMENT #

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 040791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 56043	

48,660

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225225			
		RAIL CAR# EPIX91150			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date: 2/2/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 2/28/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon K Paul, Verified	Date: 2-28-22	

CMW 2005

DIRECT 40

ID [illegible]
GROSS 82180 LB [illegible]
01:27PM 02/20/2025

[illegible] 40

[illegible] 82180 LB 82180 G
TARE 33820 LB 33820 T
NET 48360 LB 48360 N

[illegible]

[illegible] 02/20/2025

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7605126

WEIGHED BY _____

1153209 UN1141-3A 7105649

Bill of Lading (Page 1 of 2)

DOCUMENT # 01141-3A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 090
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 55595	

48,360

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225085			
		RAIL CAR# EPIX01141		NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery on said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 3/1/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91141-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Cook	Date: 3-1-2022	

EPU92-0085

TICKET 47

ID 653209.
GROSS 83440 lbINBOUND
12:26PM 05/01/2022

OUTBOUND TICKET 47

GROSS 83440 lb RECEIVED 83440 G
TARE 35080 lb 35080 T
NET 48360 lb 48360 N

DEI 94.10 lbH

12:51PM 05/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765619

WEIGHED BY _____

W53155

001114-3B

765653

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-3B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 55596	

48,760

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.38	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225109		NH	
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 8. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 2/1/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 090
City/State/Zip: PHILADELPHIA, PA 19146
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Vernon K Paul	Date: 3-1-22	

CP1465107

TICKET 53

ID 653155
GROSS 83900 lbINBOUND
01:08PM 03/01/2022

[illegible] 53

[illegible] 83900 G
[illegible] 35160 T
[illegible] 48740 N

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7656053

WEIGHED BY _____

00911410C

765637

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-3C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	NH
Ticket 55593	

48,700

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	24.35	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225284			
		RAIL CAR# EPIX91141			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per:	Date:

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91141-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon K Paul	Date: 3-1-22	

EPA223284

TICKET 26

To 653155
GROSS 84140 lb INBOUND
09:18AM 03/01/2022

OUTBOUND TARE 26

GROSS	84140 lb RECEIVED	84140 G
TARE	35420 lb	35420 T
NET	48720 lb	48720 N

PCT 24.36 lbs

10:57AM 03 01 2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7605637

WEIGHED BY _____

65555 DOH1141-3D 765639

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-3D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT . INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 55594	

48,560

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.28	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225239			
		RAIL CAR# EPIX91141			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 0. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 3/1/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: [signature]	Date: 3-1-22	

(714)

TICKET 30 259

TP 653375
GROSS 83020 lb INBOUND
09:56AM 05/01/2022

OUTBOUND TICKET 30

GROSS 83020 lb RECALLED 83020 G
TARE 34260 lb 34260 T
NET 48760 lb 48760 N

NET 24.38 TON

10:53AM 05/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1605[illegible]

WEIGHED BY _____

1052809 091141-3E 7165659

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-3E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1624

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Truck 55597	

48,760

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.36	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225242			
		RAIL CAR# EPIX91141			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Brenda Spicer Date: 3/2/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91141-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon K PAW	Date: 3-2-22	

CPLUJ2-5242

TICKET 15

ID 653209
GROSS 84300 LB INBOUND
08:49AM 03/02/2022

OUTBOUND TICKET 15

GROSS 84300 lb RECALLED 84300 G
TARE 35520 lb 35520 T
JET 48780 lb 48780 N

JET 24.3° TOL

DATED 03/02/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1605059

WEIGHED BY _____

663515 001141-3F

765689

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-3F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 220-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 55602	

48,300

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225251			
		RAIL CAR# EPIX91141			
				NET	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date: 2-2-22	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 3/3/20

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-3F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 220-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Gary	Date: 3-1-22	

EM1423231

TICKET 7

ID 653374
GROSS 82380 lbINBOUND
07:07AM 03/03/2022

OUTBOUND TICKET 7

TARE 48060 lb RECALLED
NET 34320 lb
NET 24.03 TON

03/03/2022

82380 G
34320 T
48060 N

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1105159

WEIGHED BY _____

0041494-2A

V528514

765600

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-2A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 226-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 55603	

48,360

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226366			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 8. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Carmichael	Date: 2-25-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-2A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 220-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Vernon K PA01	Date: 2-25-22

82140 G
34000 T
48140 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 16600

WEIGHED BY _____

0041494-2B

165304

765606

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-2B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 55604	

48,700

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225793			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date:	Per: Luis Castro	Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per:	Date: 2-28-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91494-2B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 503-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M I.L.C
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Joseph Conklee	Date: 2/26/2022

79480 G
30760 T
48720 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

1583814 W11494-2C 765579

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 090
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Tedat 55605	

48,900

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.45	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225215		17039	
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Vernon Bourt	Date: 2/25/22

Carrie Chabodeaux 2-25-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-2C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 220-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Vernon K [illegible]	Date: 7-25-22

EMI.033015

TICKET 16

ID 653374
GROSS 83140 LB RECEIVED
TARE 34160 LB
NET 48980 LB

TICKET 16

GROSS	83140 LB RECEIVED	83140 G
TARE	34160 LB	34160 T
NET	48980 LB	48980 N

02/25/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765529

WEIGHED BY _____

165804

UU91444-2D

765528

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-2D

8

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 090
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 55608	

48,800

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225269		H039	
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro		Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 0. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc — Certification of receipt of materials

Per: Carrie Rhubodeaux — Date: 2-25-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 81494-2D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Joseph Comuelle	Date: 2/25/2022

E1114225
367

80020 G
31260 T
48760 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765528

WEIGHED BY _____

V091494-2E

V65504

Bill of Lading (Page 1 of 2)

765589

DOCUMENT # 91494-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19146
Phone: (337) 583-2169	Phone: (440) 228-1624

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 35609	

48,800

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226307			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date:	Per: Luis Castro	Date: 2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49 Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeau Date: 2-26-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-2E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Joseph	Date: 2/25/2022

79780 G
31100 T
48680 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765579

WEIGHED BY _____

091494-2F

165815

Bill of Lading (Page 1 of 2)

265584

DOCUMENT # 91494-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1624

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Tidal 36027	

48,260

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.13	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225228			
		RAIL CAR# EPIX91494		11	
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date:	Per: Luis Castro	Date:	2/2/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc		Certification of receipt of materials	
Per: Carrie Richardson	Date:	2-25-22	

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91494-2F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 220-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Dennis Leary	Date: 2-25-22

EPA ID 25 234

TICKET 25

ID 453375
68803 82740 INBOUND
09:49AM 02/25/2022

INBOUND TICKET 25

Spec 82740 H-BEARING 82740 G
Tot 34280 Tn 34280 T
Net 48460 Lb 48460 N

Act [illegible]

Vehicle [illegible]

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

1105114

RECEIVING TICKET # _____

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Tuesday, March 29, 2022 10:21 AM
To: Patrick Dauria
Cc: Rhyne, John
Subject: EPIX 91085
Attachments: 91085.pdf

Good morning!
I hope you are having a wonderful day today 😊

Attached are BOLs and weight tickets for 91085.

5395 and 5383 were invoiced at solidification rate all others at solid rate

Thank you for your business.

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

☑ APPROVED

165255 001/080-011 164079

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-3A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT Inc INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 61143	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	21.48	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225337			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazerdous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/25/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91085-3A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Vince Paul	Date: 3-25-22

EPIU0000551

76360
34180
Net - 41580

2079

41580 Net

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 116279

WEIGHED BY _____

1683815 009108S-3B

Bill of Lading (Page 1 of 2)

7/26/01

DOCUMENT # 91085-3B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT, Inc INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 611474	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225395			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date: 2/18/2022	Per: Luis Castro		Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/28/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-3B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per:	Date: 5.28.22

CPU 025547

TICKET 54

ID 653375
GROSS 80860 lbINBOUND
01:33PM 03/28/2022

OUTBOUND TICKET 54

GROSS	80860 lb	SCALLED	80860 G
TARE	33960 lb		33960 T
NET	46900 lb		49600 N

OFF 23.45 lbs

02:50PM 03/28/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 766611

WEIGHED BY _____

0533575 CU11V85-SC 7L6D01

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-3C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Tickets 61145	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225360			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro		Date: 2-18-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/25/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91085-3C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 3-25-22

EPA1225360

TICKET 19

ID 653375
GROSS 82860 lbINBOUND
08:58AM 03/25/2022

OUTBOUND TICKET 19

GROSS 82860 lb RECALLED
TARE 34220 lb
NET 48640 lb

82860 G
34220 T
48640 N

QC1 24.32 lbs

10:51AM 03/25/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1660161

WEIGHED BY _____

0533015 W11085-3N 166077

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-3D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 161146

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.13	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225383			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials	
Per: Belinda Spicer	Date: 3/25/20	

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91085-3D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per:	Date: 3-25-22

EPID22205

TICKET 46

ID 653375
GROSS 82380 lbINBOUND
12:55PM 03/25/2022

INBOUND TICKET 46

GROSS 82380 lb RECALLED 82380 G
TARE 33960 lb 33960 T
NET 48420 lb 48420 N

QTY 24.21 TON

12:29PM 03/25/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76077

WEIGHED BY _____

163155 0091085-3E 764089

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-3E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Tickets 611147	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225272			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/28/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91085-3E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169 Acknowledgement of Receipt	
Per: Vernon K Paul	Date: 3-28-22

79240 G
30760 T
48480 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 16459

WEIGHED BY _____

10884 0091085-3F 764082

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-3F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19146
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tides

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226211			
		RAIL CAR# EPIX91085			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 3/28/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-3F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Joseph Cornelius	Date: 3/25/2022

EPIU 032811

TICKET 14

ID 653504
GROSS 80440 lb INBOUND
08:20AM 03/28/2022

OUTBOUND TICKET 14

GROSS 80440 lb RECALLED 80440 G
TARE 31540 lb 31540 T
NET 48900 lb 48900 N

US-1 24.45 TON

10:04AM 03/28/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 100082

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Monday, April 25, 2022 1:47 PM
To: Patrick Dauria
Cc: Rhyne, John
Subject: EPIX 91133-3
Attachments: 91133-3.pdf

Patrick,

91133-3~~A~~B, box 5~~190~~195 was invoiced at the solidification rate.
91133-3C, box 5291 was overweight.

Thanks,

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD,	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 41136	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	21.50	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225190			
		RAIL CAR# EPIX91133			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 4/5/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-3A

TO ---------- FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon Paul	Date: 6-14-22	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76250

WEIGHED BY _____

1053504 UU41133-OD 266254

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 61137	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	22.05	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225295			
		RAIL CAR# EPIX91133			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2-18-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardeaux Date: 4-5-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-3B

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Cody Smith	Date: 4-5-22

E # 14225 272

TICKET 20

TP 653504
GROSS 74980 LbINBOUND
08:54AM 04/05/2022

[illegible] TICKET

[illegible]	74980 lb	RECEIVED	74980 G
[illegible]	31040 lb		31040 T
NET	43940 lb		43940 N

[illegible] 31.97 DRM

[illegible] 04/05/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

7006254

RECEIVING TICKET # _____

WEIGHED BY _____

605815 W11133-3C 766259

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 611385	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	23.88	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225291			
		RAIL CAR# EPIX91133			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 4/5/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-3C

TO FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169 Acknowledgement of Receipt	
Per:	Date: 4-5-22

LP14 22271

TICKET 24

ID 653375
GROSS 82200 lb INBOUND
09:15AM 04/05/2022

OUTBOUND TICKET 24

GROSS 82200 lb RECALLED
TARE 34660 lb
NET 47540 lb

NET 23.77 TON

01:40PM 04/05/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 766259

WEIGHED BY _____

A137

1033515 CW111333-3N 166232

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tidal 6/139	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	22.70	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225042			
		RAIL CAR# EPIX91133			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Leding, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Snicer	Date: 4/4/20

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-3D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per:	Date: 4.4.22

TICKET 27

ID 653375
GROSS 78260 lbINBOUND
10:02AM , 04/04/2022

OUTBOUND TICKET 27

[illegible]	78260 lb REGALLED	78260 G
TARE	34840 lb	34840 T
NET	43420 lb	43420 N

NET 21.71 TON

[illegible] 04/04/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 716282

WEIGHED BY _____

1 053504 CWI1165 52C 760246

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 61140	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	20.85	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225267			
		RAIL CAR# EPIX91133			
		ERG# 171 H039	NH		

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 4/4/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91133-3E

TO FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/Stale/Zip: SULPHUR LA 70665	City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: [signature]	Date: 4-4-22	

E P114222 26)

TICKET 49

TD 653504
GROSS 73020 LB INBOUND
01:02PM 04/04/2022

OUTBOUND TARE 49

GROSS	73020 LB RECALLED	73020 G
TARE	31280 LB	31280 T
NET	41740 LB	41740 N

01 01.87 TON

02:47PM 04/04/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7062446

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-3F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	21.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225233 L.C.			
		RAIL CAR# EPIX91133			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Sucan Date: 4/4/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91133-3F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Vernon K PAJ	Date: 4-4-20

EPA 22252

TICKET 26

[illegible] 453488
[illegible] 72420 INBOUND
[illegible] 04/04/2022

[illegible] 72420 G
30700 T
41720 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7La0231

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Monday, April 25, 2022 1:28 PM
To: Patrick Dauria
Cc: Rhyne, John
Subject: 91063-3
Attachments: 91063-3.pdf

All solid
91063-3A, 91063-3B, 91063-3D & 91063-3E were overweight.

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Recycling is a good thing. Please recycle any printed emails.

165304 0091063-3A 160304

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-3A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 66428	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.05	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225146			
		RAIL CAR# EPIX91063			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous meterials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per Belinda Spicer	Date: 4/6/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91063-3A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vernon K Paul	Date: 4-16-20	

EPA 2223196

TICKET 37

IP 653204
GROSS 83660 lb INBOUND
11:17AM 04/06/2022

OUTBOUND TICKET 37

GROSS	83660 lb RECEIVED	83660 G
TARE	35260 lb	35260 T
NET	48400 lb	48400 N

NET 24.20 TON

01:37PM 04/06/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760304

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-3B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 61129	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225133			
		RAIL CAR# EPIX91063			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro	Date	2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/7/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91063-3B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: [signature]	Date: 4-7-22

E/T(1)-2(1)

TICKET 19

ID 663375
GROSS 83480 lbINBOUND
08:48AM 04/07/2022

OUTBOUND TICKET 19

GROSS 83480 lb METALED 83480 G
TARE 34480 lb 34480 T
NET 49000 lb 49000 N

OUT 04/07/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 706307

WEIGHED BY _____

1658504 WMI0053547660277

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-3C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT Inc INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 66130	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.30	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225334			
		RAIL CAR# EPIX91063			
		ERG# 171 H039	NH		

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials	
Per: Belinda Spicer	Date: 4/6/22	

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91063-3C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: [signature]	Date: 4-5

TICKET 5

78340 G
30740 T
48100 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7100277

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-3D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 61131	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	23.23	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225322			
		RAIL CAR# EPIX91063			
		ERG# 171 H039	NH		

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro	Date: 2/18/22	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials.

Per: Belinda Spicer Date: 4/6/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91063-3D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: V RVNOA K PAUL	Date: 4-5-22

TICKET G

ID 653204
GROSS 83900 LbINBOUND
04/06/2022

83900 G
38240 T
45660 N

L15660

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 106279

WEIGHED BY _____

0091063 3E 7663312

Bill of Lading (Page 1 of 2)

153375

DOCUMENT # 91063-3E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Tebb 61132	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.28	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225052			
		RAIL CAR# EPIX91063			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:		Date: 2/18/2022	Per: Luis Castro	Date:	2/18/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/6/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91063-3E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: [signature]	Date: 4-6-22

EPA223012

TICKET 50

ID 653375
SPRGS R1280 IDINBOUND
12:56PM 08/06/2022

ORIGINAL TICKET 50

SPRGS	83200 lb REGALIA	83200 G
TARE	34700 lb	34700 T
NET	48500 lb	48500 N

OUT 08/06/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7660312

WEIGHED BY _____

1628004 UU11063-8 766309

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-3F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tcdd 61133	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225243			
		RAIL CAR# EPIX91063			
		ERG# 171 H039	NT		

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/18/2022	Per: Luis Castro		Date: 2-18-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordieux Date: 2-18-22

Bill of Lading (Page 1 of 2)

766309

DOCUMENT # 91063-3F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tanks 61133

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225243			
		RAIL CAR# EPIX91063			
		ERG# 171 H039	NT		

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/18/2022	Per: Luis Castro	Date: 2-18-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dembowczyk	Date: 2-18-22

CH142343

TICKET 39

TF 65350A
GROSS 71420 Lb GARBOARD
TI: 2784 04/06/2022

GARBOARD TICKET 39

GROSS	71420 lb	RECALLED	71420 G
TARE	31040 lb		31040 T
NET	40380 lb		40380 N

NET 20.19 TON

TI: 2784 04/06/2022

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760306

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Monday, March 28, 2022 9:18 AM
To: Patrick Dauria
Cc: Rhyne, John
Subject: EPIX 91058
Attachments: 91058.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

BOLs and weight tickets attached for EPIX 91058.
All will be invoiced at solid rate.
Overweight charges will apply for boxes listed below:
5077
5110
5003 12574
5161

Thank you for your business!

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

168316 VRM1058-2A 766053

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058-2A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 61400

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	24.38	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225077			
		RAIL CAR# EPIX91058			
		ERG# 171 H039		NA	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp	
Per:		Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/24/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058-2A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per:	Date: 3.24.22

EPA CA 2011

TICKET 48

ID 653375
GROSS 83620 lb RECALLED
01:19PM 03/24/2022

OUTBOUND TICKET 48

GROSS	83620 lb	RECALLED	83620 G
TARE	34480 lb		34480 T
NET	49140 lb		49140 N

NET 24.57 TON

01:34A 03/24/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 766053

WEIGHED BY _____

152488 Bill of Lading (Page 1 of 2) 091058-2B 746054

DOCUMENT # 91058-2B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 61401

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU222371			
		RAIL CAR# EPIX91058			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 2/23/2022

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 2-23-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials
Per: Belinda Spicer Date: 3/2/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91058-2B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169 Acknowledgement of Receipt	
Per: [signature]	Date: 3-24-20

79240 G
30260 T
48980 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1116134

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 61402	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225317			
		RAIL CAR# EPIX91058			
		ERG# 171 H039		NA	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/24/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91058-2C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Vernon K Paul	Date: 3-24-22

79440 G
30800 T
48640 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70605

WEIGHED BY Scott C

1053504 0091058-2D 764051

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058-2D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 61403

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225110			
		RAIL CAR# EPIX91058			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/24/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91058-2D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169 Acknowledgement of Receipt	
Per: Joseph Coulter	Date: 3/29/2022

TICKET 44

ID 653504
GROSS 80240 lb INBOUND
12:53PM 05/24/2022

OUTBOUND TICKET 44

GROSS 80240 lb RECALLED 80240 G
TARE 31660 lb 31660 T
NET 48580 lb 48580 N

DET 24.2% Dmg

05/24/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76057

WEIGHED BY _____

1532004 0091058-2E 766062

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058-2E

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/1 1241
Tickets 61404

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225003			
		RAIL CAR# EPIX91058			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/25/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058-2E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Joseph	Date: 3/25/2022

EPA ID: [illegible]

TICKET 29

ID 653504
GROSS 80800 lb INBOUND
09:16:01 03/25/2022

OUTBOUND TICKET 29

GROSS 80800 lb RECEIVED 80800 G
TARE 31660 lb 31660 T
NET 49140 lb 49140 N

QTY 24.57 UNT

11:11:00 03/25/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 74062

WEIGHED BY _____

16655 UU11058-DR 7600021

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Inc

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tidab 16405	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225161			
		RAIL CAR# EPIX91058			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172 201(a)(1) (iii) of Title 4 0. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/25/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058-2F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169 Acknowledgement of Receipt	
Per: [signature]	Date: 3-25-22

EPUDAS161

TICKET 22

ID 653155
GROSS 83140 lb UNRELIABLE
03:23PM 03/25/2022

VOIDED TICKET 22

GROSS 83140 lb RECALLED 83140 G
TARE 34900 lb 34900 T
NET 48240 lb 48240 N

NET 24.12 TON

11:41AM 03/25/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760601

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Monday, March 28, 2022 9:16 AM
To: Patrick Dauria
Cc: Rhyne, John
Subject: EPIX 91475
Attachments: 91475.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

APPROVED

Good morning Patrick,
Please see attached BOLs and weight tickets for EPIX 91475.
All will be invoiced at solid rate.
Overweight charges of $125.00/ea apply to the following boxes:
5058
5207
5180 5x125 = 625.
5236
5283

Thanks and Have a Great Day!

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Recycling is a good thing. Please recycle any printed emails.

152488 0091475-2A

Bill of Lading (Page 1 of 2)

765991

DOCUMENT # 91475-2A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 61910	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225304			
		RAIL CAR# EPIX91475			
				NA	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/23/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91475-2A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company		
Acknowledgement of Receipt		
Per: Vernon K Paul	Date: 3-23-22	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Vernon K Paul	Date: 3-27-22	

79600 G
30700 T
48900 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 105041

WEIGHED BY _____

165504 001147B-2B

Bill of Lading (Page 1 of 2)

7/26/2013

DOCUMENT # 91475-2B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tickets 161411

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225058			
		RAIL CAR# EPIX91475			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rushcamp Date: 3-24-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475-2B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Joseph C	Date: 7/24/2022

EP1423008

TICKET 15

ID 653504
GROSS 80640 lb INBOUND
08:36AM 03/24/2022

OUTBOUND TICKET 15

GROSS 80640 lb RECALLED 80640 G
TARE 31840 lb 31840 T
NET 48800 lb 48800 N

NET 24.40 TON

09:53AM 03/24/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 11(0015

WEIGHED BY _____

UU11475-2C 7105984

Bill of Lading (Page 1 of 2)

DOCUMENT # 91475-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 61412	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225207			
		RAIL CAR# EPIX91475			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 8/23/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91475-2C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Joseph Courville	Date: 3/23/2022

80080 G
31580 T
48500 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1105159

WEIGHED BY _____

1528515 0041475-2D

Bill of Lading (Page 1 of 2)

765990

DOCUMENT # 91475-2D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tdwb 61413

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225180			
		RAIL CAR# EPIX91475			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/23/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475-2D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Darrell Gray	Date: 3-23-22	

(illegible)

[illegible] 21

[illegible]

[illegible] 21

[illegible] 83700 G
[illegible] 35040 T
[illegible] 48660 N

[illegible]

[illegible]

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1045990

WEIGHED BY _____

1653515 0091475-2E

Bill of Lading (Page 1 of 2)

7/6/2017

DOCUMENT # 91475-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 161414	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225236			
		RAIL CAR# EPIX91477			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/23/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91475-2E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Derrick Gray	Date: 5.24.22

EPA JJ3036

TICKET 18

ID 653375
GROSS 84060 lb INBOUND
09:09AM 03/24/2022

ORIGINAL TICKET 18

GROSS 84060 lb RECALLED 84060 G
TARE 35060 lb 35060 T
NET 49000 lb 49000 N

NET 24.50 TON

10:19AM 03/24/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760107

WEIGHED BY _____

1625604 0041410-245 766007

Bill of Lading (Page 1 of 2)

DOCUMENT # 91475-2F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 61415

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.40	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225283			
		RAIL CAR# EPIX914785			
		ERG# 171 H039		MH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date:

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 3/23/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91475-2F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Joseph	Date: 3/27/2022

80460 G
31560 T
48900 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 116100C7

WEIGHED BY _____

152488 009107S-2A 160221

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 61385

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.10	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225198			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 4/1/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075-2A

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Vance Paul	Date: 4-1-22	

79360 G
30460 T
48900 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 114021

WEIGHED BY _____

DRIVER Vernon Paul

CO-DRIVER

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM ✓

TRANSPORTER

251275

SERVICE ORDER

PROFILE NUMBER 960843 LA	START TRIP LOCATION Sulphur LA	DATE 4-1-22	TIME
	END TRIP LOCATION Sulphur LA	DATE 4-1-22	TIME
DISPATCHED BY Barnes	TRUCK # 6534	TRAILER # 707784	TYPE CT
ORDER CALLED IN BY			
INSTRUCTIONS E/R			

ROLL OFF INSTRUCTIONS (✓)

WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT
			✓		

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

DATE	TIME AM / PM	CODE	EXPLANATION
4-1-22	11:50	2	Philadelphia
	12:10	3	Philadelphia
	13:27		CWM
	15:15		

CONTACT

PHONE

LOAD SCHEDULED DATE

LOAD SCHEDULED TIME

SHIPPER NAME Philadelphia Energy

ADDRESS

CITY / STATE LACASSINE LA

P.O. #

HAZARD CLASS 9 UN / NA # 3077

PROPER SHIPPING NAME

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE			
CONTAINER PICKED UP AT JOB SITE			

LINER DELIVERED: Y N EQUIPMENT WASHOUT: Y N

BOX CONDITION: GOOD FAIR POOR

REMARKS: EPI 4-22-5198

DEMURRAGE EXPLANATIONS:

RECEIVER NAME: CWM

ADDRESS 7170 John Brannon Rd

CITY / STATE Sulphur LA

S.R. # 61385 TIME SLOT

RUN # DATE 4-1-22

SHIPPER SIGNATURE: [signature]
SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #: EPIX 91075

DOLLY DOWN EQUIPMENT / BOX #

DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE: [signature]
RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 8665

166504 00411075-28 766224

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075-28

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 613886	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225363			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49 Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/4/20

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91075-2B

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Cody Duth	Date: 4-4-22

79500 G
31080 T
48420 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1106024

WEIGHED BY _____

DRIVER Cody Smith

CO-DRIVER _____

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM

TRANSPORTER

258243

SERVICE ORDER

PROFILE NUMBER	START TRIP LOCATION	Sulphur, LA	DATE 4-4	TIME	
	END TRIP LOCATION	Sulphur, LA	DATE 4-4	TIME	
DISPATCHED BY Barry	TRUCK #	63504	TRAILER #	TYPE Rail	
ORDER CALLED IN BY					
INSTRUCTIONS pick up at rail empty bring it back					
CONTACT					
PHONE					
LOAD SCHEDULED DATE					
LOAD SCHEDULED TIME					
SHIPPER NAME Philadelphia energy					
ADDRESS					
CITY / STATE					
P.O. #					
HAZARD CLASS UN / NA #					
PROPER SHIPPING NAME					

ROLL OFF INSTRUCTIONS (✓)

WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT
			✓		

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

DATE	TIME AM / PM	CODE	EXPLANATION
4-4	6:20	1	CWM
	7:10	2	rail
	7:27	3	rail
	8:20	4	TSD
	10:05	5	TSD
			rail

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE			
CONTAINER PICKED UP AT JOB SITE	rail		?

LINER DELIVERED: Y N EQUIPMENT WASHOUT: Y N

BOX CONDITION: GOOD (FAIR) POOR

REMARKS: Box # 5363

DEMURRAGE EXPLANATIONS:

RECEIVER NAME: Cwm

ADDRESS

CITY / STATE Sulphur LA

S.R. # 61386 TIME SLOT

RUN # DATE

SHIPPER SIGNATURE: x Terri Rogers
SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #: 91075-2B

DOLLY DOWN EQUIPMENT / BOX #

DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE: _____
RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 6665

1554488 UNW175-DC 766193

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075 -2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Inc

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tillet (6138)	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.30	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225137			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/20

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201 (a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/1/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91075 - 2C

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per:	Date: 4-1-22

78880 G
30440 T
48440 N

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1106193

WEIGHED BY _____

DRIVER Vernon Paul

CO-DRIVER

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM F

TRANSPORTER

255054

SERVICE ORDER

PROFILE NUMBER 969843LA	START TRIP LOCATION Sulphur LA	DATE 4-1-22	TIME
	END TRIP LOCATION	DATE 4-1-22	TIME
DISPATCHED BY	TRUCK # 60534SC	TRAILER # 707780	TYPE CT
ORDER CALLED IN BY			
INSTRUCTIONS E/R			

CONTACT

PHONE

LOAD SCHEDULED DATE

LOAD SCHEDULED TIME

SHIPPER NAME Philadelphia Energy Cl

ADDRESS

CITY / STATE LACASSINE

P.O. #

HAZARD CLASS UN / NA #

PROPER SHIPPING NAME

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE			
CONTAINER PICKED UP AT JOB SITE		5137	30x

LINER DELIVERED: Y N EQUIPMENT WASHOUT: Y / N

BOX CONDITION: GOOD FAIR POOR

REMARKS: EPH4-22-5137

ROLL OFF INSTRUCTIONS (✓)

WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

DATE	TIME AM / PM	CODE	EXPLANATION
4-1-22	0745	2	Philadelphia
	0820	3	Philadelphia
	0900	4	CWM
	1030		

DEMURRAGE EXPLANATIONS:

RECEIVER NAME: CWM

ADDRESS

CITY / STATE Sulphur LA

S.R. # 61387 TIME SLOT

RUN # DATE 4-1-22

SHIPPER SIGNATURE: SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #: EPIX 91075

DOLLY DOWN EQUIPMENT / BOX #

DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE: RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 8665

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 61388	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225237			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/1/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91075-2D

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt	
Per: Joseph Conde	Date: 9/1/2022

TICKET 15

ID 453504
GROSS 81020 LB RECEIVED
04/01/2022

RECEIVED FROM 15

GROSS	81020 LB RECEIVED	81020 G
TARE	32160 LB	32160 T
NET	48860 LB	48860 N

NET 24.43 TON

04/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 766191

WEIGHED BY _____

DRIVER Joseph Courville

CO-DRIVER

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM

TRANSPORTER

251399

SERVICE ORDER

PROFILE NUMBER 969843LA	START TRIP LOCATION Sulphur LA	DATE 4/11/2022	TIME
	END TRIP LOCATION Sulphur LA	DATE 4/11/2022	TIME
DISPATCHED BY Barry	TRUCK # 653505	TRAILER # 200889	TYPE Roll
ORDER CALLED IN BY			

INSTRUCTIONS	WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT
			✓			

CONTACT

PHONE

LOAD SCHEDULED DATE

LOAD SCHEDULED TIME

SHIPPER NAME phil energy

ADDRESS

CITY / STATE Lacassine LA

P.O. #

HAZARD CLASS UN / NA #

PROPER SHIPPING NAME

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

DATE	TIME AM / PM	CODE	EXPLANATION
	6:25	1	CWM
	6:05	2	phil energy
	7:40	3	phil energy
	8:30	4	CWM TSD
	1000	5	CWM TSD

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE	OT	5293	30yd
CONTAINER PICKED UP AT JOB SITE	OT	5237	30yd

LINER DELIVERED: Y N EQUIPMENT WASHOUT: Y N

BOX CONDITION: GOOD FAIR POOR

DEMURRAGE EXPLANATIONS:

REMARKS: return 1 Ep I4-22-5293
plug 1 Ep I4-22-5237

RECEIVER NAME: CWM

ADDRESS 7110 John Brannon Rd

CITY / STATE Sulphur LA

S.R. # 61388 TIME SLOT

RUN # DATE 4/11/2022

SHIPPER SIGNATURE:
SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #: 91075-2D

DOLLY DOWN EQUIPMENT / BOX #

DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE:
RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 8665

VRE004 0091075-2E M106220

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 61389	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.30	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225130			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NM	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 2/23/2022	Per: Luis Castro	Date: 2/23/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 4/1/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075-2E

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC Inc
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Joseph Connelly	Date: 4/1/2022

EPA 22150

TICKET 43

ID 653504
GROSS 80120 lb INBOUND
01:26PM 04/01/2022

OUTBOUND TICKET 43

GROSS	80120 lb	RECALLED	80120 G
TARE	31840 lb		31840 T
NET	48280 lb		48280 N

NET 24.14 TON

01:45PM 04/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 110(2022)

WEIGHED BY _____

DRIVER Joseph Courville

CO-DRIVER

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM

TRANSPORTER

251400

SERVICE ORDER

PROFILE NUMBER 969893LA	START TRIP LOCATION Sulphur LA	DATE 4/11/2022	TIME		
	END TRIP LOCATION Sulphur LA	DATE 4/11/2022	TIME		
DISPATCHED BY Barry	TRUCK # 653504	TRAILER # 200889	TYPE Rail		
ORDER CALLED IN BY					

INSTRUCTIONS	WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT
			✓			

ROLL OFF INSTRUCTIONS (✓)

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

CONTACT

PHONE

	DATE	TIME AM PM	CODE	EXPLANATION
LOAD SCHEDULED DATE		9:55	1	CWM
LOAD SCHEDULED TIME		10:40	2	phil energy
SHIPPER NAME phil energy		11:50	3	phil energy
ADDRESS		13:20	4	CWM TSD
CITY / STATE Lacassine LA		14:45	5	CWM TSD
P.O. #				
HAZARD CLASS UN / NA #				
PROPER SHIPPING NAME				

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE	OIT	5237	30yd
CONTAINER PICKED UP AT JOB SITE	OIT	5130	30yd

DEMURRAGE EXPLANATIONS:

LINER DELIVERED: Y (N) EQUIPMENT WASHOUT: Y (N)

BOX CONDITION: GOOD FAIR POOR

REMARKS: return ICP In-22-5237
phil ICP In-22-5130

RECEIVER NAME: CWM

ADDRESS 7170 John Brannon Rd

CITY / STATE Sulphur LA

S.R. # 61384

RUN #

TIME SLOT

DATE 4/11/2022

SHIPPER SIGNATURE: CWM

SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #: 91075-2EP

DOLLY DOWN EQUIPMENT / BOX #

DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE:

RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 8665

W538915 0091075-2F

Bill of Lading (Page 1 of 2)

X662141

DOCUMENT # 91075-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 61390	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225148			
		RAIL CAR# EPIX91075			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 2/23/2022	Per: Luis Castro		Date: 2-23-22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc		Certification of receipt of materials	
Per: Carrie Dubodleaux	Date:	2-23-22 4/1/22	

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91075-2F

TO ..... FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 4.1.22

EPH 033118
TICKET No

ID 455875
GROSS 83600 lb MANUAL
11:20AM 04/01/2022

VOIDED TICKET

GROSS 83600 lb RECORDED 83600 G
TARE 34440 lb 34440 T
NET 49160 lb 49160 N

NET 24.58 TON

01:30PM 04/01/2022

OVERWEIGHT

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760241

WEIGHED BY _____

DRIVER Derrick Gary
CO-DRIVER Dante Tanner

WASTE MANAGEMENT

CWM TRANSPORTATION - LAKE CHARLES
7170 JOHN BRANNON RD.
SULPHUR, LA 70663
(800) 336-2169

CWM
TRANSPORTER

250063

SERVICE ORDER

PROFILE NUMBER 969843LA	START TRIP LOCATION Sulphur, LA	DATE 4-1-22	TIME	
	END TRIP LOCATION	DATE	TIME	
DISPATCHED BY Barry	TRUCK # 653375	TRAILER #	TYPE Rail	
ORDER CALLED IN BY				

INSTRUCTIONS: S/O

CONTACT

PHONE

LOAD SCHEDULED DATE

LOAD SCHEDULED TIME

SHIPPER NAME Phil Energy

ADDRESS

CITY / STATE Iowa, LA

P.O. #

HAZARD CLASS UN / NA #

PROPER SHIPPING NAME

	CONTAINER TYPE	CONTAINER NUMBER	SIZE
CONTAINER DROPPED AT JOB SITE	Rail	5346	30
CONTAINER PICKED UP AT JOB SITE		5148	

LINER DELIVERED: Y N EQUIPMENT WASHOUT: Y N

BOX CONDITION: GOOD FAIR POOR

REMARKS:

ROLL OFF INSTRUCTIONS (✓)

WAIT TO LOAD	DEL. ONLY	SWAP	TURN	P/U ONLY	INTER-PLANT
		✓			

CODES:

1. DEPART FACILITY
2. ARRIVE JOB SITE
3. LEFT JOB SITE
4. ARRIVE TSD
5. DEPART TSD
6. ARRIVED FACILITY
7. BREAKDOWN START
8. BREAKDOWN END
9. OTHER (EXPLAIN)

DATE	TIME AM / PM	CODE	EXPLANATION
	8:41	1	CWM
	9:32	2	Rail
	10:10	3	Rail
	1118	4	CWM
	1330	5	CWM

DEMURRAGE EXPLANATIONS:

RECEIVER NAME: CWM
ADDRESS 7170 JBR
CITY / STATE Sulphur, LA
S.R. # 61390
RUN #
TIME SLOT
DATE

SHIPPER SIGNATURE: Tasha Reyes
SHIPPER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

MANIFEST #:
DOLLY DOWN EQUIPMENT / BOX #
DOLLY DOWN LOCATION

RECEIVER'S SIGNATURE: _____
RECEIVER'S SIGNATURE VERIFIES ARRIVAL AND DEPARTURE TIME

Port 8665

ANALYTICAL REPORT

Lab Number:	L2374526
Client:	Terraphase Engineering Inc. 1100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADEPHIA REFINERY
Project Number:	P044.001.002
Report Date:	12/26/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2374526-01	GPR251-01-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:12	12/15/23
L2374526-02	GPR250-02-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 16:26	12/15/23
L2374526-03	GPR251-02-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 16:08	12/15/23
L2374526-04	GPR251-03-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:45	12/15/23
L2374526-05	GPR251-04-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:33	12/15/23
L2374526-06	GPR250-03-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:17	12/15/23
L2374526-07	GPR250-03-SS01D	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:17	12/15/23
L2374526-08	GPR250-01-0.5-1.0	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:54	12/15/23
L2374526-09	GPR250-01-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:38	12/15/23
L2374526-10	FB-231215-1	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:37	12/15/23
L2374526-11	TB-231215-1	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:56	12/15/23

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Case Narrative (continued)

Report Submission

December 26, 2023: This final report includes the results of all requested analyses.

December 22, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Microextractables

L2374526-10, -11, and WG1868000-3: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 12/26/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 19:09
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	ND		mg/kg	0.00042	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00085	0.00022	1
Toluene	ND		mg/kg	0.00085	0.00046	1
1,2-Dibromoethane	ND		mg/kg	0.00042	0.00025	1
Ethylbenzene	ND		mg/kg	0.00085	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00085	0.00025	1
Xylenes, Total	ND		mg/kg	0.00085	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00085	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00016	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 17:53
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00091	0.00023	1
Toluene	ND		mg/kg	0.00091	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00091	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00091	0.00026	1
Xylenes, Total	ND		mg/kg	0.00091	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00091	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 18:43
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00045	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00091	0.00023	1
Toluene	ND		mg/kg	0.00091	0.00049	1
1,2-Dibromoethane	ND		mg/kg	0.00045	0.00026	1
Ethylbenzene	ND		mg/kg	0.00091	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00091	0.00026	1
Xylenes, Total	ND		mg/kg	0.00091	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00091	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 18:18
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00027	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/21/23 10:48
Analyst: JIC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0022	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 15:06
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00019	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00093	0.00024	1
Toluene	ND		mg/kg	0.00093	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00093	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00052	1
o-Xylene	ND		mg/kg	0.00093	0.00027	1
Xylenes, Total	ND		mg/kg	0.00093	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00093	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 15:45
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00097	0.00025	1
Toluene	ND		mg/kg	0.00097	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00097	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00097	0.00028	1
Xylenes, Total	ND		mg/kg	0.00097	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00097	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 16:24
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	0.00028	J	mg/kg	0.00042	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00084	0.00022	1
Toluene	ND		mg/kg	0.00084	0.00046	1
1,2-Dibromoethane	ND		mg/kg	0.00042	0.00025	1
Ethylbenzene	ND		mg/kg	0.00084	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00047	1
o-Xylene	ND		mg/kg	0.00084	0.00024	1
Xylenes, Total	ND		mg/kg	0.00084	0.00024	1
Isopropylbenzene	ND		mg/kg	0.00084	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00016	1
1,2,4-Trimethylbenzene	0.00038	J	mg/kg	0.0017	0.00028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/26/23 12:43
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:59
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-11
Client ID: TB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:56
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/26/23 12:51
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-11
Client ID: TB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:56
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 01:25
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/20/23 09:50
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-04 Batch: WG1866806-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/20/23 09:58
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06-07,09 Batch: WG1866905-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 09:26
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1867304-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:06
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 10-11 Batch: WG1867314-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/26/23 12:11
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 10-11 Batch: WG1868000-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-04 Batch: WG1866806-3 WG1866806-4								
Methyl tert butyl ether	130		122		66-130	6		30
Benzene	106		100		70-130	6		30
1,2-Dichloroethane	107		101		70-130	6		30
Toluene	101		96		70-130	5		30
1,2-Dibromoethane	120		118		70-130	2		30
Ethylbenzene	102		96		70-130	6		30
p/m-Xylene	105		100		70-130	5		30
o-Xylene	102		98		70-130	4		30
Isopropylbenzene	93		89		70-130	4		30
1,3,5-Trimethylbenzene	93		90		70-130	3		30
1,2,4-Trimethylbenzene	94		90		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		109		70-130
Toluene-d8	99		96		70-130
4-Bromofluorobenzene	93		94		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06-07,09 Batch: WG1866905-3 WG1866905-4								
Methyl tert butyl ether	97		98		66-130	1		30
Benzene	94		94		70-130	0		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	87		87		70-130	0		30
1,2-Dibromoethane	91		93		70-130	2		30
Ethylbenzene	90		90		70-130	0		30
p/m-Xylene	92		92		70-130	0		30
o-Xylene	92		92		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	92		91		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	94		94		70-130
4-Bromofluorobenzene	102		101		70-130
Dibromofluoromethane	102		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1867304-3 WG1867304-4								
Methyl tert butyl ether	124		126		66-130	2		30
Benzene	106		103		70-130	3		30
1,2-Dichloroethane	104		103		70-130	1		30
Toluene	99		96		70-130	3		30
1,2-Dibromoethane	119		120		70-130	1		30
Ethylbenzene	98		95		70-130	3		30
p/m-Xylene	102		100		70-130	2		30
o-Xylene	100		98		70-130	2		30
Isopropylbenzene	91		88		70-130	3		30
1,3,5-Trimethylbenzene	91		89		70-130	2		30
1,2,4-Trimethylbenzene	92		89		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		109		70-130
Toluene-d8	97		95		70-130
4-Bromofluorobenzene	92		92		70-130
Dibromofluoromethane	106		106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 10-11 Batch: WG1867314-3 WG1867314-4								
Methyl tert butyl ether	89		88		63-130	1		20
Benzene	98		97		70-130	1		20
1,2-Dichloroethane	98		96		70-130	2		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		100		70-130	5		20
Isopropylbenzene	110		100		70-130	10		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	108		107		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	99		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 10-11 Batch: WG1868000-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 10-11	QC Batch ID: WG1868000-3	QC Sample: L2374526-10	Client ID: FB-231215-1									
1,2-Dibromoethane	ND	0.25	0.233	93		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:00
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.19	0.019	1
Phenanthrene	0.092	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.13		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.078	J	mg/kg	0.12	0.022	1
Chrysene	0.077	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.093	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.081	J	mg/kg	0.16	0.047	1
Benzo(ghi)perylene	0.043	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	65		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 09:11
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.028	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.045	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.032	J	mg/kg	0.12	0.022	1
Chrysene	0.039	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.058	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.038	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	70		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 08:21
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.037	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.033	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.022	J	mg/kg	0.11	0.021	1
Chrysene	0.022	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	66		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:25
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.035	J	mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.046	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.077	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.060	J	mg/kg	0.12	0.022	1
Chrysene	0.063	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.084	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.076	J	mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.044	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	66		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:50
Analyst: EK
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.18		mg/kg	0.043	0.026	1
Fluorene	ND		mg/kg	0.22	0.021	1
Phenanthrene	0.12	J	mg/kg	0.13	0.026	1
Anthracene	ND		mg/kg	0.13	0.042	1
Pyrene	0.20		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.15		mg/kg	0.13	0.024	1
Chrysene	0.17		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.23		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.21		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	81		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 09:35
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.040	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.28		mg/kg	0.12	0.024	1
Anthracene	0.057	J	mg/kg	0.12	0.039	1
Pyrene	0.48		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.28		mg/kg	0.12	0.022	1
Chrysene	0.28		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.31		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.27		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.14	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	70		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 08:46
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.056	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.069	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.035	J	mg/kg	0.12	0.022	1
Chrysene	0.038	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.042	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	78		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 12:28
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.19		mg/kg	0.040	0.024	1
Fluorene	0.021	J	mg/kg	0.20	0.019	1
Phenanthrene	0.24		mg/kg	0.12	0.024	1
Anthracene	0.11	J	mg/kg	0.12	0.039	1
Pyrene	0.55		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.37		mg/kg	0.12	0.022	1
Chrysene	0.42		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.58		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.45		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.30		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	58		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 11:00
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	49		15-120
4-Terphenyl-d14	52		41-149

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/19/23 05:54
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-07,09 Batch: WG1865200-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	77		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:36
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1866777-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	71		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07,09 Batch: WG1865200-2 WG1865200-3								
Naphthalene	56		61		40-140	9		50
Fluorene	56		62		40-140	10		50
Phenanthrene	57		64		40-140	12		50
Anthracene	60		66		40-140	10		50
Pyrene	62		66		35-142	6		50
Benzo(a)anthracene	57		64		40-140	12		50
Chrysene	61		68		40-140	11		50
Benzo(b)fluoranthene	62		66		40-140	6		50
Benzo(a)pyrene	69		73		40-140	6		50
Benzo(ghi)perylene	59		64		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	62		67		23-120
2-Fluorobiphenyl	57		64		30-120
4-Terphenyl-d14	67		72		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1866777-2 WG1866777-3								
Naphthalene	58		75		40-140	26		40
Fluorene	59		76		40-140	25		40
Phenanthrene	58		74		40-140	24		40
Anthracene	59		76		40-140	25		40
Pyrene	55		68		26-127	21		40
Benzo(a)anthracene	66		86		40-140	26		40
Chrysene	61		78		40-140	24		40
Benzo(b)fluoranthene	59		74		40-140	23		40
Benzo(a)pyrene	57		72		40-140	23		40
Benzo(ghi)perylene	66		83		40-140	23		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	67		84		23-120
2-Fluorobiphenyl	61		75		15-120
4-Terphenyl-d14	55		67		41-149

METALS

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	38.0		mg/kg	2.29	0.123	1	12/19/23 14:53	12/20/23 21:32	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	36.3		mg/kg	2.24	0.120	1	12/19/23 14:53	12/20/23 21:37	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.8		mg/kg	2.28	0.122	1	12/19/23 14:53	12/20/23 21:42	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	40.1		mg/kg	2.32	0.124	1	12/19/23 14:53	12/20/23 21:47	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.7		mg/kg	2.63	0.141	1	12/19/23 14:53	12/20/23 21:51	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.8		mg/kg	2.36	0.126	1	12/19/23 14:53	12/20/23 21:56	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	17.2		mg/kg	2.31	0.124	1	12/19/23 14:53	12/20/23 22:24	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	350		mg/kg	2.35	0.126	1	12/19/23 14:53	12/20/23 22:28	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/20/23 19:10	12/21/23 07:25	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07,09 Batch: WG1865412-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/19/23 14:53	12/20/23 19:40	1,6010D	TAA

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1866341-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/20/23 19:10	12/21/23 07:01	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG1865412-2 SRM Lot Number: D122-540								
Lead, Total	100		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1866341-2								
Lead, Total	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1865412-3 QC Sample: L2373843-01 Client ID: MS Sample												
Lead, Total	319	49.2	453	**272**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1866341-3 QC Sample: L2374526-10 Client ID: FB-231215-1												
Lead, Total	ND	530	550.3	104		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1865412-4 QC Sample: L2373843-01 Client ID: DUP Sample						
Lead, Total	319	405	mg/kg	**24**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1866341-4 QC Sample: L2374526-10 Client ID: FB-231215-1						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.3		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.8		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.9		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.2		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07,09 QC Batch ID: WG1864892-1 QC Sample: L2373100-01 Client ID: DUP Sample						
Solids, Total	68.9	69.3	%	1		20

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-01A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-01B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-01C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-01D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-01F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-02A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-02B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-02C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-02D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-02F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-03A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-03B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-03C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-03D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-03F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-04A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-04B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-04C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-04D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-04F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-05A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-05B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-05C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-05D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-05F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-06A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-06B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-06C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-06D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-06F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-07A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-07B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-07C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-07D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-07F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-08A	Vial MeOH preserved	A	NA		3.9	Y	Absent		HOLD-8260HLW(14)
L2374526-08B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	HOLD-8260HLW(14)
L2374526-08C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	HOLD-8260HLW(14)
L2374526-08D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2374526-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)
L2374526-08F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HOLD-8260HLW(14)
L2374526-09A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-09B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-09C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-09D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-09F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-10A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-10B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14),PA-8260(14)
L2374526-10C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-10D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2374526-10E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374526-10F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374526-11A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-11B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14),PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374526

ALPHA Analytical
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 160, Princeton NJ
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
please see attached short list.
please email EDD to EDD@terraphase.com

ANALYSIS: Short List 1-5 (see attached list)

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS	Sample Specific Comments	TOTAL # BOTTLES
74526-01	GPR251-01-5501	12/15/23	14:12	SO	KJO	X		
02	GPR250-02-5501	12/15/23	16:26	SO	KJO	X		
03	GPR251-02-5501	12/15/23	16:08	SO	KJO	X		
04	GPR251-03-5501	12/15/23	15:45	SO	KJO	X		
05	GPR251-04-5501	12/15/23	15:33	SO	KJO	X		
06	GPR250-03-5501	12/15/23	15:17	SO	KJO	X		
07	GPR250-03-5501D	12/15/23	15:17	SO	KJO	X		
08	GPR250-01-0.5-1.0	12/15/23	14:54	SO	KJO	H		
09	GPR250-01-5501	12/15/23	14:38	SO	KJO	X		
10	FB-231215-1	12/15/23	18:37	SO	KJO	X		

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015		12/15/23 2015
Anthony Green	12/15/23 2300	Anthony Green	DEC 15 2023 2215
	12/16 0130		12/16 0130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374526

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 110, Princeton NJ
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1-5 (see attached list)	SAMPLE HANDLING	TOTAL # BOTTLES
74526-11	TB-231215-1	12/15/23	18:56	SO	CJO	X		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)
Sample Specific Comments

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015	Anthony Green	12/15/23 2015
Anthony Green	12/15/23 2100		DEC 15 2023 2215
	12/16/23 0730		12/16/23 0730

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

PADEP Short List 1-5:

Benzene

Cumene

1,2 – Dibromoethane

1,2 – Dichloroethane

Ethyl Benzene

Toluene

1,2,4 – Trimethylbenzene

1,3,5 – Trimethylbenzene

Methyl tert-butyl ether

Xylenes (total)

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(g,h,i)perylene

Chrysene

Fluorene

Naphthalene

Phenanthrene

Pyrene

Lead

Serial_No:12262316:20

ANALYTICAL REPORT

Lab Number:	L2374524
Client:	Terraphase Engineering Inc. 1100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	12/27/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2374524-01	TG07A-PZ01-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 08:27	12/15/23
L2374524-02	TG07A-PZ02-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 09:57	12/15/23
L2374524-03	TG07A-SW02-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 10:46	12/15/23
L2374524-04	TG07A-SW01-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 16:39	12/15/23
L2374524-05	FB-231215-2	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:45	12/15/23
L2374524-06	TB-231215-2	WATER	3144 W. PASSYUNK AVE.	12/15/23 19:00	12/15/23
L2374524-07	TG07A-PZ01-231215D	WATER	3144 W. PASSYUNK AVE.	12/15/23 08:27	12/15/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Case Narrative (continued)

Report Revision

December 27, 2023: The Volatile Organics analyte list has been amended on L2374524-01 through -07.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2374524-07: A sample identified as "TG07A-PZ01-231215D" was received, but not listed on the Chain of Custody. At the client's request, this sample was analyzed.

Microextractables

L2374524-01, -02, -03, -04, -05, -06, and -07: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 12/27/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:04
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01 Date Collected: 12/15/23 08:27
Client ID: TG07A-PZ01-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:58
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:12
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02 Date Collected: 12/15/23 09:57
Client ID: TG07A-PZ02-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 22:24
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:20
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03 Date Collected: 12/15/23 10:46
Client ID: TG07A-SW02-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 22:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.20	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.19	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:28
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04 Date Collected: 12/15/23 16:39
Client ID: TG07A-SW01-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 23:16
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.19	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.19	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:40
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05 Date Collected: 12/15/23 18:45
Client ID: FB-231215-2 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 23:42
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-06
Client ID: TB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 19:00
Date Received: 12/15/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:48
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-06 Date Collected: 12/15/23 19:00
Client ID: TB-231215-2 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:08
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:56
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07 Date Collected: 12/15/23 08:27
Client ID: TG07A-PZ01-231215D Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:33
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/21/23 17:35
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-07 Batch: WG1866933-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:06
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1867314-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-07 Batch: WG1866933-2								
1,2-Dibromoethane	99		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1867314-3 WG1867314-4								
Methyl tert butyl ether	89		88		63-130	1		20
Benzene	98		97		70-130	1		20
1,2-Dichloroethane	98		96		70-130	2		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		100		70-130	5		20
Isopropylbenzene	110		100		70-130	10		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	108		107		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	99		100		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 10:27
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	70		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:53
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	64		15-120
4-Terphenyl-d14	62		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:10
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	0.03	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	50		15-120
4-Terphenyl-d14	48		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	56		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:43
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	64		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 10:44
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	70		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:36
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05,07 Batch: WG1866777-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	71		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05,07 Batch: WG1866777-2 WG1866777-3								
Naphthalene	58		75		40-140	26		40
Fluorene	59		76		40-140	25		40
Phenanthrene	58		74		40-140	24		40
Anthracene	59		76		40-140	25		40
Pyrene	55		68		26-127	21		40
Benzo(a)anthracene	66		86		40-140	26		40
Chrysene	61		78		40-140	24		40
Benzo(b)fluoranthene	59		74		40-140	23		40
Benzo(a)pyrene	57		72		40-140	23		40
Benzo(ghi)perylene	66		83		40-140	23		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	67		84		23-120
2-Fluorobiphenyl	61		75		15-120
4-Terphenyl-d14	55		67		41-149

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05,07 QC Batch ID: WG1866777-4 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215						
Naphthalene	ND	0.46	ug/l	NC		40
Fluorene	ND	0.02J	ug/l	NC		40
Phenanthrene	ND	0.03J	ug/l	NC		40
Anthracene	ND	ND	ug/l	NC		40
Pyrene	ND	ND	ug/l	NC		40
Benzo(a)anthracene	ND	ND	ug/l	NC		40
Chrysene	ND	ND	ug/l	NC		40
Benzo(b)fluoranthene	ND	ND	ug/l	NC		40
Benzo(a)pyrene	ND	ND	ug/l	NC		40
Benzo(ghi)perylene	ND	ND	ug/l	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		60		23-120
2-Fluorobiphenyl	75		59		15-120
4-Terphenyl-d14	70		54		41-149

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	1.609		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 17:18	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:06	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	2.074		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:11	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.8006	J	ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:16	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:20	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.4309	J	ug/l	1.000	0.3430	1	12/21/23 08:33	12/21/23 14:07	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1865448-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 16:55	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 07 Batch: WG1866342-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 08:33	12/21/23 13:44	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1865448-2								
Lead, Dissolved	104		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 07 Batch: WG1866342-2								
Lead, Dissolved	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1865448-3 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215												
Lead, Dissolved	1.609	530	564.8	106		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 07 QC Batch ID: WG1866342-3 QC Sample: L2374524-07 Client ID: TG07A-PZ01-231215D												
Lead, Dissolved	0.4309J	530	541.2	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1865448-4 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215						
Lead, Dissolved	1.609	0.4029J	ug/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 07 QC Batch ID: WG1866342-4 QC Sample: L2374524-07 Client ID: TG07A-PZ01-231215D						
Lead, Dissolved	0.4309J	0.4608J	ug/l	NC		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374524-01A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-01A1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-01B1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-01C1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-01D1	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		ARCHIVE()
L2374524-01E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-01E1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		ARCHIVE()
L2374524-01F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-01F1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		ARCHIVE()
L2374524-02A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-02B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-02C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-02D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-02E	Amber 250ml unpreserved	A	9	9	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-02F	Amber 250ml unpreserved	A	9	9	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-03A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-03B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-03C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-03D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374524-03E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-03F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-04A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-04B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-04C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-04D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-04E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-04F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-05A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-05B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-05C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-05D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-05E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-05F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-06A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-06B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-07A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-07B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-07C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-07D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-07E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-07F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374524

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: ~~[redacted]~~ Terraphase Engineering

Address: ~~3144 W. Passyunk Ave~~ 100 Canal Pointe Blvd, Suite 110 Princeton, NJ

Phone: 215-297-3502

Fax:

Email: nick.scala@terraphase.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: ~~[redacted]~~ former Philadelphia Refinery

Project Location: 3144 W. Passyunk Ave

Project #: P044.001.002

Project Manager: Nick Scala

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
please see attached short list. VOCs need 5260 + 5011, lead is dissolved.
please send EDD to EDD@terraphase.com (Equis format)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1-5 (VOCs 5260 + 5011, Dissolved Lead)	SAMPLE HANDLING	TOTAL # BOTTLES
74524-01	TG07A-PZ01-231215	12/15/23	9:27	GW	KJO	X		
02	TG07A-PZ02-231215	12/15/23	9:57	GW	KJO	X		
03	TG07A-SW02-231215	12/15/23	10:46	GW	KJO	X		
04	TG07A-SW01-231215	12/15/23	16:39	GW	KJO	X		
05	FB-231215-2	12/15/23	18:45	FB	KJO	X		
06	TB-231215-2	12/15/23	19:00	TB	KJO	X		

SAMPLE HANDLING
Filtration: field
☒ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015		12/15/23 2015
	12/15/23 2100	Anthony Green	DEC 15 2023 2215
Anthony Green	12/16 0130		12/16 0830

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

PADEP Short List 1-5:

Benzene

Cumene

1,2 – Dibromoethane

1,2 – Dichloroethane

Ethyl Benzene

Toluene

1,2,4 – Trimethylbenzene

1,3,5 – Trimethylbenzene

Methyl tert-butyl ether

Xylenes (total)

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(g,h,i)perylene

Chrysene

Fluorene

Naphthalene

Phenanthrene

Pyrene

Lead

Serial_No:12272310:32

Appendix C

October 4, 2023 *Technical Memorandum – Tank Group 07A Gauging Summary* prepared by Terraphase Engineering on behalf of PESRM

Technical Memorandum

To:	Lisa Strobridge, PG Department of Environmental Protection Southeast Regional Office	From:	Terraphase Engineering Inc.
cc:	Philadelphia Energy Solutions Refining and Marketing LLC c/o Joseph Jeray, PE, Vice President Hilco Redevelopment Partners		
Date:	October 4, 2023	Project No.:	P044.001.002
Subject:	**Tank Group 07A Gauging Summary** **Former Philadelphia Energy Solutions Refinery, Philadelphia, PA**		

Terraphase Engineering Inc. (Terraphase) prepared this memorandum, on behalf of the Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), to present results of water level monitoring in the Tank Group 07A area. The results of the monitoring will be used to support obtaining regulatory closure of the tanks GP R 250 and 251, known as Tank Group 07A, at the former Philadelphia Energy Solutions (PES) Refinery property located at 3144 Passyunk Avenue in Philadelphia, Pennsylvania. Specifically, if groundwater levels do not lower to a point where Site Assessment samples can be collected, this information will be utilized to support an alternate sampling scope proposal to the Pennsylvania Department of Environmental Protection (PADEP).

Background

Standing water has been observed within the containment berm for former tanks GP R 250 and 251 for several months. The water was initially considered to be pooled stormwater that would evaporate and eventually dry to allow for soil sampling. NorthStar Contracting Group, Inc. conducted dewatering activities in the area. A diesel-powered trash pump was operated for over 175 hours in an attempt to remove the standing water. The dewatering effort was unsuccessful, as soil conditions were still considered too saturated for sampling.

In addition, Terraphase has conducted a comparison of recent groundwater elevations to the surface elevation in the area. The analysis indicated that groundwater is at an elevation similar to or greater than the ground surface elevation in the area of the two tanks.

These two lines of evidence indicate that the standing water present in the GP R 250 and 251 tank containment area is likely daylighted groundwater. During a call on May 11, 2023, PADEP suggested that piezometers be installed to further evaluate standing water/daylighted groundwater observed in the GP R 250 and 251 tank containment area.

Piezometer Installation

On July 7, 2023, Terraphase installed two AMS™ stainless steel drive-point piezometers (TG07A-PZ-01 and TG07A-PZ-02) near the edge of the standing water surrounding the former locations of GP R 250 and 251. Piezometer TG07A-PZ-01 was installed east of the tank berm. Piezometer TG07A-PZ-02 was installed in a constructed access ramp on the western side of the area. The piezometer locations are depicted on Figure 1.

The piezometers were installed using hammer drill. The AMS™ stainless steel drive-point piezometers contain a 14-inch-long slotted screen. Each point was installed to intercept the anticipated groundwater table based on historical groundwater elevations in surrounding wells. TG07A-PZ-01 and TG07A-PZ-02 were installed to a depth of approximately 2 feet bgs and the stainless-steel rod attached to the screen was allowed to stick up above the ground surface. A hydrated bentonite seal was placed around the point at ground surface to prevent surface water infiltration. Neither of the piezometers was located within the observed standing water, nor was standing water observed at the ground surface of the piezometer locations during the weekly monitoring (discussed below). The location and elevation of each piezometer was surveyed by Vargo Associates of Franklinville, NJ.

Weekly Monitoring

Terraphase measured groundwater levels in the new piezometers (see Figure 1) daily from July 11 through July 14, 2023, then the monitoring was performed weekly for an additional 5 weeks through August 18, 2023. In addition, photographs were taken during each weekly gauging event to document the standing water conditions. A photolog depicting the conditions of the area is provided in Attachment A. Lastly, Terraphase marked a measuring point location on the concrete containment wall along the southern portion of the tank group, and the measuring point location was also surveyed by Vargo. The concrete measuring point allowed for a direct measurement of the standing water located within the tank group.

During each monitoring event, groundwater level measurements were collected from each of the monitoring points using an electronic water level indicator. Groundwater elevations were then calculated as summarized in Table 1. As shown on Table 1, the groundwater elevation in piezometer TG07A-PZ-01 was greater than or equal to the elevation of the surface water (as measured from the measuring point on the concrete wall) during all nine gauging events. The groundwater elevation in TG07A-PZ-02 was greater than or equal to the elevation of the surface water in six of the nine sampling events and was within 0.05 ft of the surface water elevation in the other gauging events. These measurements indicate that the surface water in TG07A is daylighted groundwater.

Based on this analysis, PESRM would like to re-visit our discussion regarding an alternative Site Assessment sampling approach. Please let us know when you are available to discuss.

Attachments (3):

Table 1 – Monitoring Well Gauging Summary
Figure 1 – Gauging Locations Tank Group 07A
Attachment A – TG07A Gauging Photograph Log

Tables

1 Monitoring Well Gauging Summary

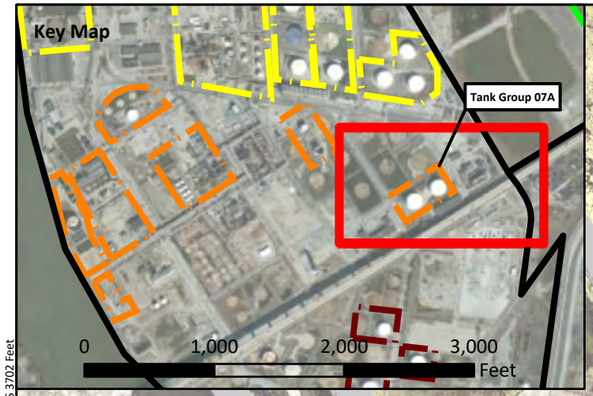
Table 01
Monitoring Well Gauging Summary
Tank Group 07A
Philadelphia Energy Solutions Refining and Marketing LLC, Philadelphia, PA

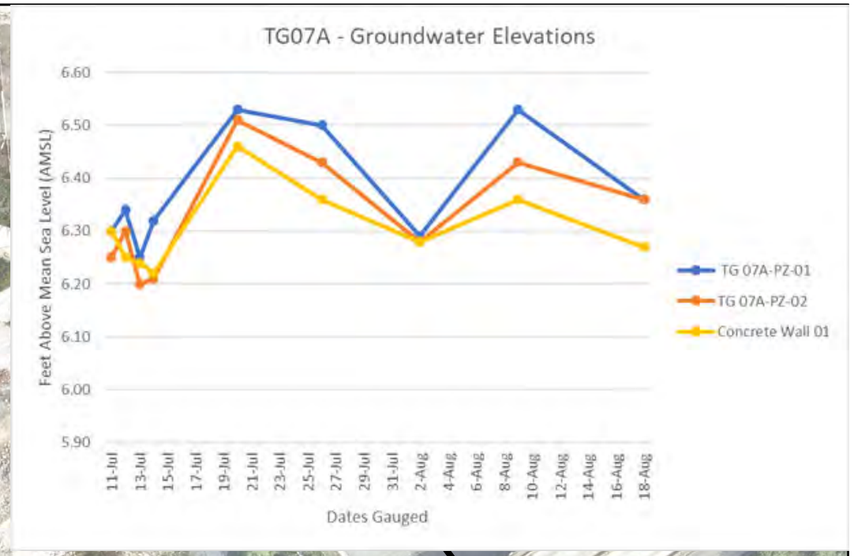
			July 11, 2023		July 12, 2023		July 13, 2023		July 14, 2023		July 20, 2023		July 26, 2023		August 2, 2023		August 9, 2023		August 18, 2023	
Location ID	**TOIC** (ft AMSL)	**DTB** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)	**Depth to Water** (ft below TOIC)	**Groundwater/ Surface Water Elevation** (ft AMSL)
TG 07A-PZ-01	9.55	5.25	3.25	6.30	3.21	6.34	3.30	6.25	3.23	6.32	3.02	6.53	3.05	6.50	3.26	6.29	3.02	6.53	3.19	6.36
TG 07A-PZ-02	9.52	5.22	3.27	6.25	3.22	6.30	3.32	6.20	3.31	6.21	3.01	6.51	3.09	6.43	3.24	6.28	3.09	6.43	3.16	6.36
Concrete Wall 01	11.8	3.81*	5.48	6.30	5.53	6.25	5.54	6.24	5.56	6.22	5.32	6.46	5.42	6.36	5.50	6.28	5.42	6.36	5.51	6.27

Notes:
Vertical Datum is NAVD 1988.
Surveyed by Vargo Associates on July, 12 2023
Elevations at the Concrete Wall 01 measuring point are surface water elevations
* -- Value represents ground surface within tank area

Figures

1 Gauging Locations Tank Group 07A





TG07A-PZ-01

GP R 250

GP R 251

TG07A-PZ-02

Legend

- Subject to AST Closure Plan
- Tank Group 07 Boundary
- Berm Boundary
- Concrete Containment Wall
- Existing Concrete Sump Pit
- Estimated Groundwater Flow Direction
- Associated Piping
- Piezometer
- Concrete Wall

Note:
Aerial imagery source: Nearmap (May 14, 20123)

0 100 200 Feet

1 inch = 100 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Gauging Locations Tank Group 07A

Figure 1

File: N:\GIS\P=\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07A\(20230908) Figure 1 - Gauging Locations.mxd 10/4/2023 Created by: Resource Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

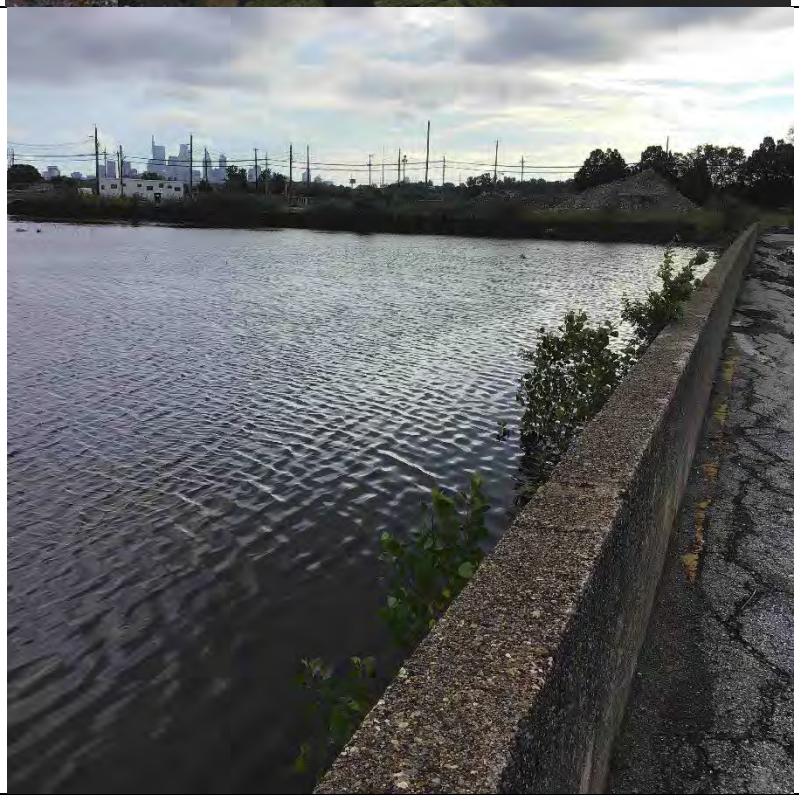
Attachment A

TG07A Gauging Photograph Log

Photograph 1:

Standing water level

Date: July 7, 2023



Photograph 2:

Standing water level

Date: July 10, 2023

terraphase engineering

Client: Philadelphia Energy Solutions Refining and Marketing LLC

Project: TG07A Piezometer Monitoring – 3144 W. Passyunk Ave, Philadelphia, PA

Project Number: P044.001.002

Photo Log

Photograph 3:

Standing water level

Date: July 11, 2023

Photograph 4:

Standing water level

Date: July 12, 2023

Photograph 5:

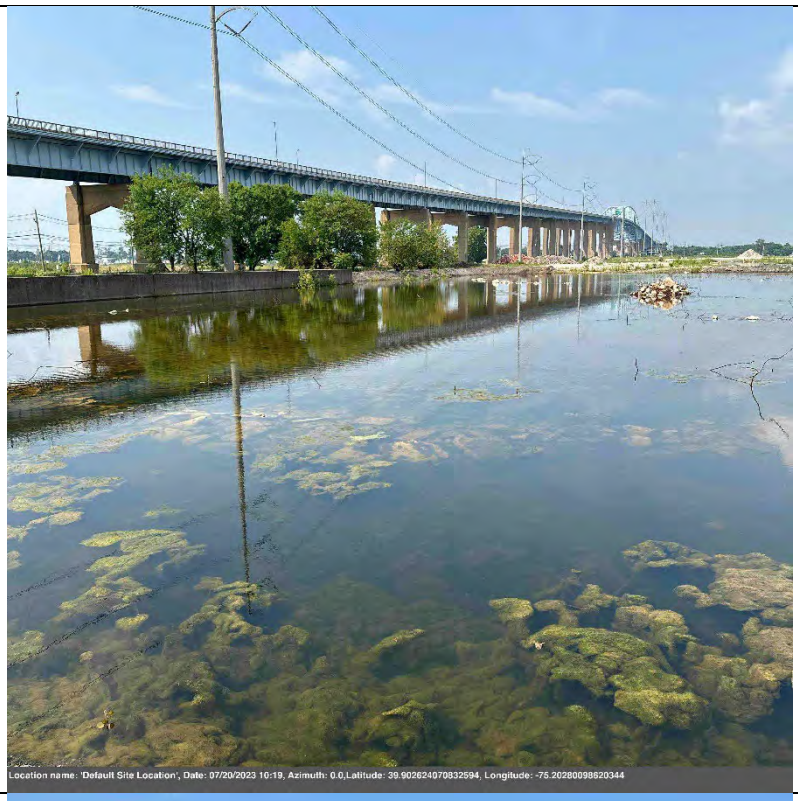
Standing water level

Date: July 13, 2023

Photograph 6:

Standing water level

Date: July 14, 2023



Photograph 7:

Standing water level

Date: July 20, 2023

Photograph 8:

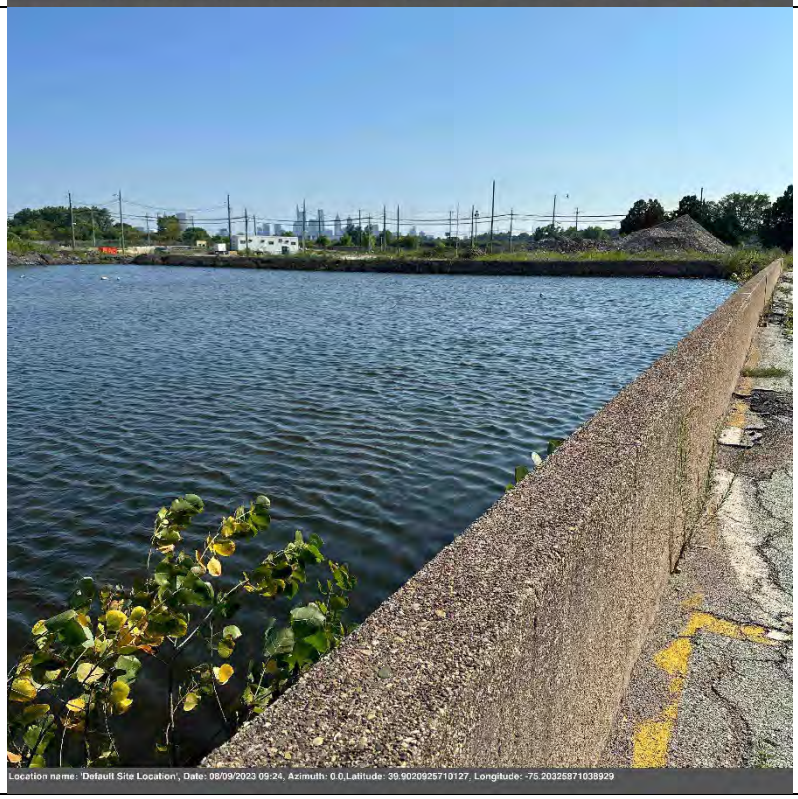
Standing water level

Date: July 26, 2023

Photograph 9:

Standing water level

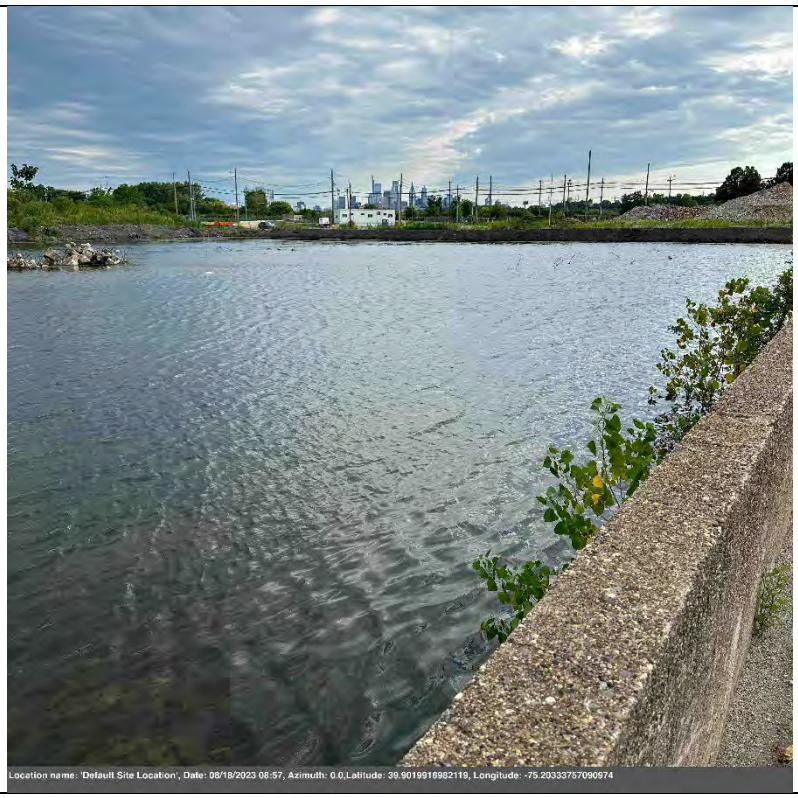
Date: August 2, 2023



Photograph 10:

Standing water level

Date: August 9, 2023



Photograph 11:

Standing water level

Date: August 18, 2023

Appendix D

Soil Boring Logs and Piezometer Completion Records

Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR251-01

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **0.5 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			SM		SILTY SAND, tan brown, dense, moist, poorly graded	0	Sample GPR251-01-SS01 from 0.0-0.5' bgs
			GM		SILT AND GRAVEL, tan brown, wet, dense, well graded	0	
			GP		SAND AND GRAVEL, tan brown, wet, loose, well graded	0	
2						0	
	21/60		SM		SILTY SAND, tan brown, dense, wet, poorly graded	1.6	
4						0	
						0	
						0	
						0	
					End of boring	0	
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR251-02

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **4.0 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GW		GRAVEL, dark brown, poorly graded, loose, moist	0	
			CL		CLAY, tan brown, firm, medium plasticity, low dilatancy, mottling, moist	0	
2	48/60					0	Sample GPR251-02-SS01 from 3.0-3.5' bgs
4					▽	0	
			SM		SILTY SAND, tan brown, dense, poorly graded, wet	0	
					End of boring		
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR251-03

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **3.0 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GW		GRAVEL, tan brown, well graded, loose, moist, large, angular pieces	0	
			CL		CLAY, tan brown, moist, firm, medium plasticity, low dilatancy, mottling	0	
2	22/60					0	Sample GPR251-03-SS01 from 2.5-3.0' bgs
			SM		SILTY SAND, tan brown, loose, poorly graded, wet ▽	0	
4					brick fragments	0	
					End of boring	0	
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR251-04

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **1.5 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GW		GRAVEL, black, loose, poorly graded, moist, no odor	0	
			CL		SILTY CLAY, tan brown, firm, medium plasticity, low dilatancy, moist, black mottling	0	Sample GPR251-04-SS01 from 1.0-1.5' bgs
2			SM		SANDY SILT, tan brown, poorly graded, dense, wet	0	
						0	
4						0	
						0	
					End of boring	0	
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR250-01

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **3.0 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GW		GRAVEL AND SAND, well graded, dry, some brick-like material, loose	0	Sample GPR250-01-0.5-1.0 from 0.5-1.0' bgs
						0.2	
					1/2" layer of white rock, possibly quartz	0	
2			SM		SANDY SILT AND GRAVEL, tan brown, dense, medium plasticity, low dilatancy, moist, well graded	0	Sample GPR250-01-SS01 from 2.5-3.0' bgs
	32/60					0	
4			SW		GRAVELLY SAND, tan brown, loose, wet, well graded	0	
					End of boring	0	
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR250-02

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Hand Auger**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **3 feet bgs**
Drill Rig Type **NA**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **2.0 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			SM		SILTY SAND, tan brown, some gravel, dense, moist, well graded	0	
	36/36					0	
2					▽	0	Sample GPR250-02-SS01 from 1.5-2.0' bgs
						0	
						0	
					End of boring due to saturation in borehole		
4							
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Log of Boring GPR250-03

Sheet 1 of 1

Date(s) Drilled **12/15/23**	Logged By **K. O'Rourke**	Checked By **A. Strohl**
Drilling Method **Direct Push**	Drill Bit Size/Type **2" x 5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **MB Drilling**	Elevation **NA**
Groundwater Level **2.5 feet bgs**	Sampling Method(s) **Grab**	Temporary Well **NA**
Borehole Backfill **Soil Cuttings**	Location **Tank Group 07A**	

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GW		Gravel, black and red, dry, loose, well graded	0	
			CL		CLAY AND GRAVEL, tan brown, medium plasticity, low dilatancy, moist, firm, no odor	0	
					gravel content decreases	0	
2	31/60					0	Sample GPR250-03-SS01 and GPR250-03-SS01D from 2.0-2.5' bgs
			MH		SANDY SILT, tan brown, medium plasticity, low dilatancy, firm, wet	0	
			CL		CLAY, tan brown, medium plasticity, low dilatancy, wet, firm, some mottling	0	
4						0	
					End of boring	0	
6							
8							
10							
12							
14							
16							
18							
20							

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Project: **Former Philadelphia Refinery**
Project Location: **3144 W. Passyunk Avenue**
Project Number: **P044.001.002**

Key to Log of Boring

Sheet 1 of 1

Depth (feet)	Recovery (inches)	Sample Type	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8

COLUMN DESCRIPTIONS

1. Depth (feet): Depth in feet below the ground surface.
2. Recovery (inches): Percent Recovery
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. USCS Symbol: USCS symbol of the subsurface material.
5. Graphic Log: Graphic depiction of the subsurface material encountered.
6. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
7. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
8. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
Silty GRAVEL (GM)
Poorly graded GRAVEL (GP)
Well graded GRAVEL (GW)
SILT, SILT w/SAND, SANDY SILT (MH)
Silty SAND (SM)
Well graded SAND (SW)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Grab Sample

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)
Water level (after waiting, AW)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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PIEZOMETER COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 7/10/2023 TIME 12:30
WELL INSTALLATION BEGAN:
DATE 7/10/2023 TIME 12:30
WELL COMPLETION FINISHED:
DATE 7/10/2023 TIME 14:04
DRILLING CO.
DRILLER Terraphase Engineering Inc.
LICENSE
DRILL RIG
DRILLING METHOD:
- ☐ HOLLOW STEM AUGER
- ☐ SONIC
- ☑ OTHER: AMS™ Stainless Steel Piezometer Groundwater Sampling Kit

DIAMETER OF AUGERS:
ID NA OD NA

BENTONITE SEAL

AMOUNT CALCULATED
AMOUNT USED 2 lbs.
- ☑ PELLETS, SIZE 1/4 - inch, hydrated
- ☐ CHIPS, SIZE
- ☐

PRODUCT Pel-Plug
MFG. BY PDSCo, Inc.
METHOD INSTALLED
- ☑ POURED ☐ TREMIE

AMOUNT OF WATER USED 8 ounces

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ SAND, SIZE
- ☐ FORMATION COLLAPSE:

FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
- ☐ POURED ☐ TREMIE

SURVEY INFORMATION

TOC ELEVATION 9.55 ft AMSL
GROUND ELEVATION 6.6 ft. AMSL
NORTHING COORD. 217703.8353
EASTING COORD. 2683074.7401
DATE SURVEYED June 12, 2023
SURVEY CO. Vargo Associates
TOC MEASURING POINT:

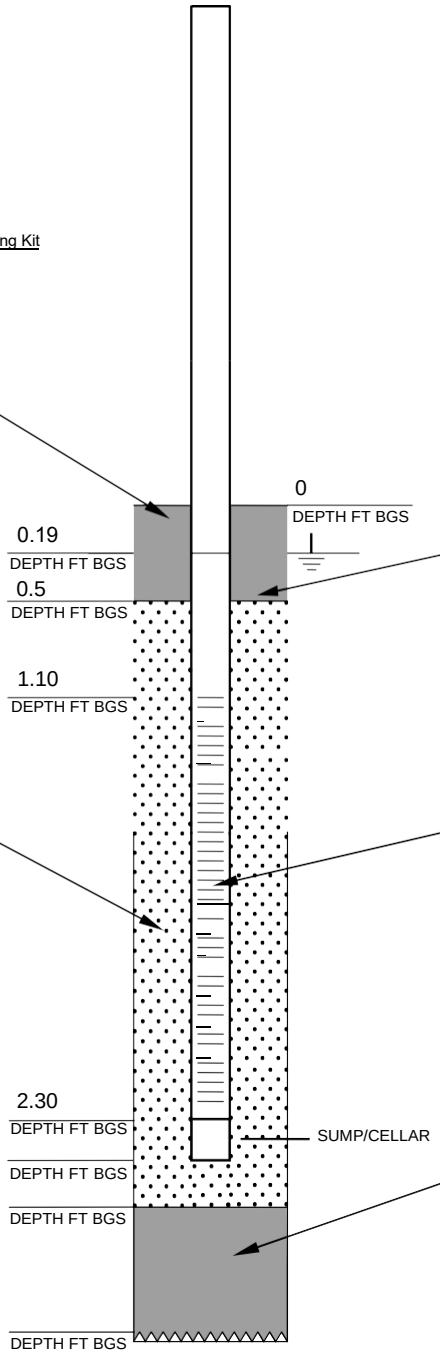
CENTRALIZERS USED?

- ☐ YES ☑ NO

CENTRALIZER DEPTHS:

SURFACE COMPLETION

- ☐ FLUSH MOUNT
- ☑ ABOVE GROUND W/BUMPER POST
- ☐ CONCRETE ☐ ASPHALT



PIEZOMETER

MONITORING WELL NO. TG07A-PZ-01
PROJECT PESRM
SITE 3144 W. Passyunk Ave, Philadelphia
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
GROUND SURFACE TO BOTTOM OF WELL 2.30 ft bgs

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ GROUT FORMULA
  - PORTLAND CEMENT
  - BENTONITE
  - WATER
- ☐ PREPARED MIX
  - PRODUCT
  - MFG. BY

METHOD INSTALLED
- ☐ POURED ☐ TREMIE

CASING

- ☐ SCHEDULE 40 PVC
- ☑ Stainless Steel Piezometer Extension w/ Coupler

PRODUCT
MFG BY. AMS™
CASING DIAMETER:
ID 0.875 - inch OD 1.25 - inch
LENGTH OF CASING 3 ft.

WELL SCREEN

- ☐ SCHEDULE 40 PVC
- ☑ Stainless Steel Piezometer w/ Coupler

PRODUCT
MFG. BY: AMS™
CASING DIAMETER:
ID 0.875 - inch OD 1.25 - inch
SLOT SIZE #50 mesh filter screen
LENGTH OF SCREEN 1.2 ft.
LENGTH OF SUMP NA

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ BENTONITE CHIPS, SIZE
- ☐ BENTONITE PELLETS, SIZE
- ☐ SLURRY
- ☐ FORMATION COLLAPSE

FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
- ☐ POURED ☐ TREMIE

PIEZOMETER COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 7/10/2023 TIME 10:30
WELL INSTALLATION BEGAN:
DATE 7/10/2023 TIME 10:30
WELL COMPLETION FINISHED:
DATE 7/10/2023 TIME 12:07
DRILLING CO.
DRILLER Terraphase Engineering Inc.
LICENSE
DRILL RIG
DRILLING METHOD:
- ☐ HOLLOW STEM AUGER
- ☐ SONIC
- ☑ OTHER: AMS™ Stainless Steel Piezometer Groundwater Sampling Kit

DIAMETER OF AUGERS:
ID NA OD NA

BENTONITE SEAL

AMOUNT CALCULATED
AMOUNT USED 2 lbs.
- ☑ PELLETS, SIZE 1/4 - inch, hydrated
- ☐ CHIPS, SIZE
- ☐

PRODUCT Pel-Plug
MFG. BY PDSCo, Inc.
METHOD INSTALLED
- ☑ POURED ☐ TREMIE

AMOUNT OF WATER USED 8 ounces

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ SAND, SIZE
- ☐ FORMATION COLLAPSE:

FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
- ☐ POURED ☐ TREMIE

SURVEY INFORMATION

TOC ELEVATION 9.52 ft AMSL
GROUND ELEVATION 6.8 ft. AMSL
NORTHING COORD. 217464.675
EASTING COORD. 2682728.9078
DATE SURVEYED June 12, 2023
SURVEY CO. Vargo Associates
TOC MEASURING POINT:

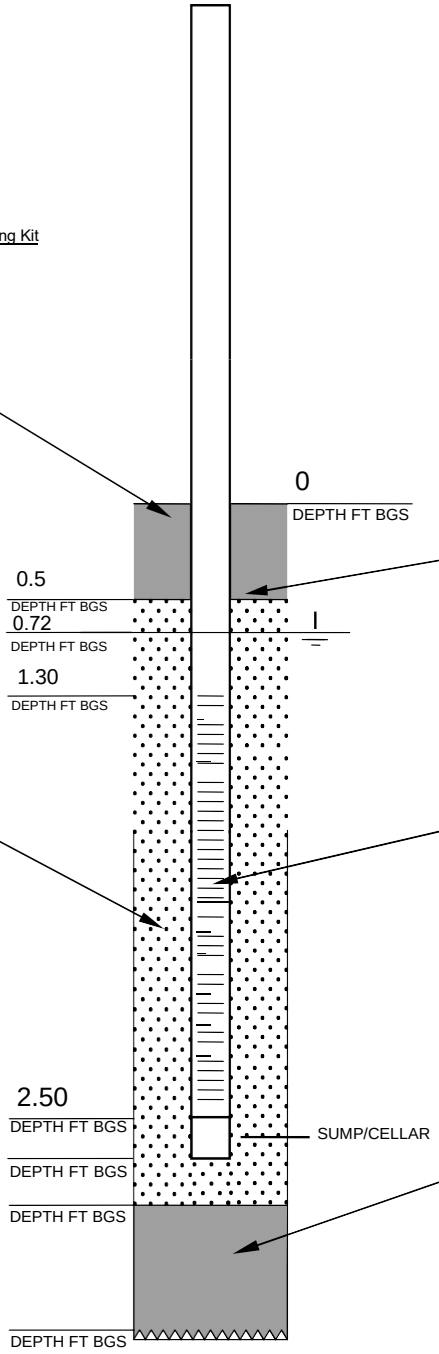
CENTRALIZERS USED?

- ☐ YES ☑ NO

CENTRALIZER DEPTHS:

SURFACE COMPLETION

- ☐ FLUSH MOUNT
- ☑ ABOVE GROUND W/BUMPER POST
- ☐ CONCRETE ☐ ASPHALT



PIEZOMETER

MONITORING WELL NO. TG07A-PZ-02
PROJECT PESRM
SITE 3144 W. Passyunk Ave, Philadelphia
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
GROUND SURFACE TO BOTTOM OF WELL 2.5 ft bgs

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ GROUT FORMULA
  - PORTLAND CEMENT
  - BENTONITE
  - WATER
- ☐ PREPARED MIX
  - PRODUCT
  - MFG. BY

METHOD INSTALLED
- ☐ POURED ☐ TREMIE

CASING

- ☐ SCHEDULE 40 PVC
- ☑ Stainless Steel Piezometer Extension w/ Coupler

PRODUCT
MFG BY. AMS™
CASING DIAMETER:
ID 0.875 - inch OD 1.25 - inch
LENGTH OF CASING 3 ft.

WELL SCREEN

- ☐ SCHEDULE 40 PVC
- ☑ Stainless Steel Piezometer w/ Coupler

PRODUCT
MFG. BY: AMS™
CASING DIAMETER:
ID 0.875 - inch OD 1.25 - inch
SLOT SIZE #50 mesh filter screen
LENGTH OF SCREEN 1.2 ft.
LENGTH OF SUMP NA

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED NA
- ☐ BENTONITE CHIPS, SIZE
- ☐ BENTONITE PELLETS, SIZE
- ☐ SLURRY
- ☐ FORMATION COLLAPSE

FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
- ☐ POURED ☐ TREMIE

Appendix E

Laboratory Data Package

ANALYTICAL REPORT

Lab Number:	L2374524
Client:	Terraphase Engineering Inc. 1100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	12/27/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2374524-01	TG07A-PZ01-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 08:27	12/15/23
L2374524-02	TG07A-PZ02-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 09:57	12/15/23
L2374524-03	TG07A-SW02-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 10:46	12/15/23
L2374524-04	TG07A-SW01-231215	WATER	3144 W. PASSYUNK AVE.	12/15/23 16:39	12/15/23
L2374524-05	FB-231215-2	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:45	12/15/23
L2374524-06	TB-231215-2	WATER	3144 W. PASSYUNK AVE.	12/15/23 19:00	12/15/23
L2374524-07	TG07A-PZ01-231215D	WATER	3144 W. PASSYUNK AVE.	12/15/23 08:27	12/15/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Case Narrative (continued)

Report Revision

December 27, 2023: The Volatile Organics analyte list has been amended on L2374524-01 through -07.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2374524-07: A sample identified as "TG07A-PZ01-231215D" was received, but not listed on the Chain of Custody. At the client's request, this sample was analyzed.

Microextractables

L2374524-01, -02, -03, -04, -05, -06, and -07: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 12/27/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:04
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01 Date Collected: 12/15/23 08:27
Client ID: TG07A-PZ01-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:58
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:12
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02 Date Collected: 12/15/23 09:57
Client ID: TG07A-PZ02-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 22:24
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:20
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03 Date Collected: 12/15/23 10:46
Client ID: TG07A-SW02-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 22:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.20	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.19	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 19:28
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04 Date Collected: 12/15/23 16:39
Client ID: TG07A-SW01-231215 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 23:16
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.19	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.19	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:40
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05 Date Collected: 12/15/23 18:45
Client ID: FB-231215-2 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/21/23 23:42
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-06
Client ID: TB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 19:00
Date Received: 12/15/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:48
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-06 Date Collected: 12/15/23 19:00
Client ID: TB-231215-2 Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:08
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/21/23 18:56
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07 Date Collected: 12/15/23 08:27
Client ID: TG07A-PZ01-231215D Date Received: 12/15/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:33
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/21/23 17:35
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/21/23 14:22

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-07 Batch: WG1866933-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:06
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1867314-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-07 Batch: WG1866933-2								
1,2-Dibromoethane	99		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1867314-3 WG1867314-4								
Methyl tert butyl ether	89		88		63-130	1		20
Benzene	98		97		70-130	1		20
1,2-Dichloroethane	98		96		70-130	2		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		100		70-130	5		20
Isopropylbenzene	110		100		70-130	10		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	108		107		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	99		100		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 10:27
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	70		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:53
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	64		15-120
4-Terphenyl-d14	62		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:10
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	0.03	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	50		15-120
4-Terphenyl-d14	48		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	56		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 18:43
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	64		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 10:44
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	70		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:36
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05,07 Batch: WG1866777-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	71		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05,07 Batch: WG1866777-2 WG1866777-3								
Naphthalene	58		75		40-140	26		40
Fluorene	59		76		40-140	25		40
Phenanthrene	58		74		40-140	24		40
Anthracene	59		76		40-140	25		40
Pyrene	55		68		26-127	21		40
Benzo(a)anthracene	66		86		40-140	26		40
Chrysene	61		78		40-140	24		40
Benzo(b)fluoranthene	59		74		40-140	23		40
Benzo(a)pyrene	57		72		40-140	23		40
Benzo(ghi)perylene	66		83		40-140	23		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	67		84		23-120
2-Fluorobiphenyl	61		75		15-120
4-Terphenyl-d14	55		67		41-149

Lab Duplicate Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05,07 QC Batch ID: WG1866777-4 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215						
Naphthalene	ND	0.46	ug/l	NC		40
Fluorene	ND	0.02J	ug/l	NC		40
Phenanthrene	ND	0.03J	ug/l	NC		40
Anthracene	ND	ND	ug/l	NC		40
Pyrene	ND	ND	ug/l	NC		40
Benzo(a)anthracene	ND	ND	ug/l	NC		40
Chrysene	ND	ND	ug/l	NC		40
Benzo(b)fluoranthene	ND	ND	ug/l	NC		40
Benzo(a)pyrene	ND	ND	ug/l	NC		40
Benzo(ghi)perylene	ND	ND	ug/l	NC		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		60		23-120
2-Fluorobiphenyl	75		59		15-120
4-Terphenyl-d14	70		54		41-149

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-01
Client ID: TG07A-PZ01-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	1.609		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 17:18	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-02
Client ID: TG07A-PZ02-231215
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 09:57
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:06	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-03
Client ID: TG07A-SW02-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 10:46
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	2.074		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:11	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-04
Client ID: TG07A-SW01-231215
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 16:39
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.8006	J	ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:16	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374524
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-05
Client ID: FB-231215-2
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 18:45
Date Received: 12/15/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 18:20	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2374524
Project Number: P044.001.002
Report Date: 12/27/23

SAMPLE RESULTS

Lab ID: L2374524-07
Client ID: TG07A-PZ01-231215D
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 08:27
Date Received: 12/15/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.4309	J	ug/l	1.000	0.3430	1	12/21/23 08:33	12/21/23 14:07	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2374524

Project Number: P044.001.002 **Report Date:** 12/27/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1865448-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 09:34	12/21/23 16:55	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 07 Batch: WG1866342-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	12/21/23 08:33	12/21/23 13:44	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374524

Report Date: 12/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1865448-2								
Lead, Dissolved	104		-		80-120	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 07 Batch: WG1866342-2								
Lead, Dissolved	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1865448-3 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215												
Lead, Dissolved	1.609	530	564.8	106		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 07 QC Batch ID: WG1866342-3 QC Sample: L2374524-07 Client ID: TG07A-PZ01-231215D												
Lead, Dissolved	0.4309J	530	541.2	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1865448-4 QC Sample: L2374524-01 Client ID: TG07A-PZ01-231215						
Lead, Dissolved	1.609	0.4029J	ug/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 07 QC Batch ID: WG1866342-4 QC Sample: L2374524-07 Client ID: TG07A-PZ01-231215D						
Lead, Dissolved	0.4309J	0.4608J	ug/l	NC		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374524-01A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-01A1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-01B1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-01C1	Vial HCl preserved	A	NA		3.9	Y	Absent		ARCHIVE()
L2374524-01D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-01D1	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		ARCHIVE()
L2374524-01E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-01E1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		ARCHIVE()
L2374524-01F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-01F1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		ARCHIVE()
L2374524-02A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-02B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-02C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-02D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-02E	Amber 250ml unpreserved	A	9	9	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-02F	Amber 250ml unpreserved	A	9	9	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-03A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-03B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-03C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-03D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374524
Report Date: 12/27/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374524-03E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-03F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-04A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-04B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-04C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-04D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-04E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-04F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-05A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-05B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-05C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-05D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-05E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-05F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-06A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-06B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-07A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-07B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374524-07C	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14)
L2374524-07D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2374524-07E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374524-07F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2374524
Project Number:	P044.001.002	**Report Date:**	12/27/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374524

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: ~~[redacted]~~ Terraphase Engineering

Address: ~~3144 W. Passyunk Ave~~ 100 Canal Pointe Blvd, Suite 110 Princeton, NJ

Phone: 215-297-3502

Fax:

Email: nick.scala@terraphase.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: ~~[redacted]~~ former Philadelphia Refinery

Project Location: 3144 W. Passyunk Ave

Project #: P044.001.002

Project Manager: Nick Scala

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
please see attached short list. VOCs need 5260 + 5011, lead is dissolved.
please send EDD to EDD@terraphase.com (Equis format)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1-5 (VOCs 5260 + 5011, Dissolved Lead)	SAMPLE HANDLING	TOTAL # BOTTLES
74524-01	TG07A-PZ01-231215	12/15/23	9:27	GW	KJO	X		
02	TG07A-PZ02-231215	12/15/23	9:57	GW	KJO	X		
03	TG07A-SW02-231215	12/15/23	10:46	GW	KJO	X		
04	TG07A-SW01-231215	12/15/23	16:39	GW	KJO	X		
05	FB-231215-2	12/15/23	18:45	FB	KJO	X		
06	TB-231215-2	12/15/23	19:00	TB	KJO	X		

SAMPLE HANDLING
Filtration: field
☒ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015		12/15/23 2015
	12/15/23 2100	Anthony Green	DEC 15 2023 2215
Anthony Green	12/16 0130		12/16 0830

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

PADEP Short List 1-5:

Benzene

Cumene

1,2 – Dibromoethane

1,2 – Dichloroethane

Ethyl Benzene

Toluene

1,2,4 – Trimethylbenzene

1,3,5 – Trimethylbenzene

Methyl tert-butyl ether

Xylenes (total)

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(g,h,i)perylene

Chrysene

Fluorene

Naphthalene

Phenanthrene

Pyrene

Lead

Serial_No:12272310:32

ANALYTICAL REPORT

Lab Number:	L2374526
Client:	Terraphase Engineering Inc. 1100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADEPHIA REFINERY
Project Number:	P044.001.002
Report Date:	12/26/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2374526-01	GPR251-01-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:12	12/15/23
L2374526-02	GPR250-02-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 16:26	12/15/23
L2374526-03	GPR251-02-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 16:08	12/15/23
L2374526-04	GPR251-03-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:45	12/15/23
L2374526-05	GPR251-04-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:33	12/15/23
L2374526-06	GPR250-03-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:17	12/15/23
L2374526-07	GPR250-03-SS01D	SOIL	3144 W. PASSYUNK AVE.	12/15/23 15:17	12/15/23
L2374526-08	GPR250-01-0.5-1.0	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:54	12/15/23
L2374526-09	GPR250-01-SS01	SOIL	3144 W. PASSYUNK AVE.	12/15/23 14:38	12/15/23
L2374526-10	FB-231215-1	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:37	12/15/23
L2374526-11	TB-231215-1	WATER	3144 W. PASSYUNK AVE.	12/15/23 18:56	12/15/23

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Case Narrative (continued)

Report Submission

December 26, 2023: This final report includes the results of all requested analyses.

December 22, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Microextractables

L2374526-10, -11, and WG1868000-3: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 12/26/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 19:09
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	ND		mg/kg	0.00042	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00085	0.00022	1
Toluene	ND		mg/kg	0.00085	0.00046	1
1,2-Dibromoethane	ND		mg/kg	0.00042	0.00025	1
Ethylbenzene	ND		mg/kg	0.00085	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00048	1
o-Xylene	ND		mg/kg	0.00085	0.00025	1
Xylenes, Total	ND		mg/kg	0.00085	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00085	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00016	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 17:53
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00091	0.00023	1
Toluene	ND		mg/kg	0.00091	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00091	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00091	0.00026	1
Xylenes, Total	ND		mg/kg	0.00091	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00091	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 18:43
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00045	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00091	0.00023	1
Toluene	ND		mg/kg	0.00091	0.00049	1
1,2-Dibromoethane	ND		mg/kg	0.00045	0.00026	1
Ethylbenzene	ND		mg/kg	0.00091	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00091	0.00026	1
Xylenes, Total	ND		mg/kg	0.00091	0.00026	1
Isopropylbenzene	ND		mg/kg	0.00091	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 18:18
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00027	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/21/23 10:48
Analyst: JIC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00058	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0022	0.00060	1
o-Xylene	ND		mg/kg	0.0011	0.00031	1
Xylenes, Total	ND		mg/kg	0.0011	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 15:06
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00019	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00093	0.00024	1
Toluene	ND		mg/kg	0.00093	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00093	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00052	1
o-Xylene	ND		mg/kg	0.00093	0.00027	1
Xylenes, Total	ND		mg/kg	0.00093	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00093	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 15:45
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00097	0.00025	1
Toluene	ND		mg/kg	0.00097	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00097	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00097	0.00028	1
Xylenes, Total	ND		mg/kg	0.00097	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00097	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/20/23 16:24
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	0.00028	J	mg/kg	0.00042	0.00014	1
1,2-Dichloroethane	ND		mg/kg	0.00084	0.00022	1
Toluene	ND		mg/kg	0.00084	0.00046	1
1,2-Dibromoethane	ND		mg/kg	0.00042	0.00025	1
Ethylbenzene	ND		mg/kg	0.00084	0.00012	1
p/m-Xylene	ND		mg/kg	0.0017	0.00047	1
o-Xylene	ND		mg/kg	0.00084	0.00024	1
Xylenes, Total	ND		mg/kg	0.00084	0.00024	1
Isopropylbenzene	ND		mg/kg	0.00084	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00016	1
1,2,4-Trimethylbenzene	0.00038	J	mg/kg	0.0017	0.00028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/26/23 12:43
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 00:59
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-11
Client ID: TB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:56
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/26/23 12:51
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-11
Client ID: TB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:56
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/22/23 01:25
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/20/23 09:50
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-04 Batch: WG1866806-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/20/23 09:58
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06-07,09 Batch: WG1866905-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 09:26
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1867304-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/21/23 21:06
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 10-11 Batch: WG1867314-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/26/23 12:11
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/26/23 11:04

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 10-11 Batch: WG1868000-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-04 Batch: WG1866806-3 WG1866806-4								
Methyl tert butyl ether	130		122		66-130	6		30
Benzene	106		100		70-130	6		30
1,2-Dichloroethane	107		101		70-130	6		30
Toluene	101		96		70-130	5		30
1,2-Dibromoethane	120		118		70-130	2		30
Ethylbenzene	102		96		70-130	6		30
p/m-Xylene	105		100		70-130	5		30
o-Xylene	102		98		70-130	4		30
Isopropylbenzene	93		89		70-130	4		30
1,3,5-Trimethylbenzene	93		90		70-130	3		30
1,2,4-Trimethylbenzene	94		90		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		109		70-130
Toluene-d8	99		96		70-130
4-Bromofluorobenzene	93		94		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06-07,09 Batch: WG1866905-3 WG1866905-4								
Methyl tert butyl ether	97		98		66-130	1		30
Benzene	94		94		70-130	0		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	87		87		70-130	0		30
1,2-Dibromoethane	91		93		70-130	2		30
Ethylbenzene	90		90		70-130	0		30
p/m-Xylene	92		92		70-130	0		30
o-Xylene	92		92		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	92		91		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	94		94		70-130
4-Bromofluorobenzene	102		101		70-130
Dibromofluoromethane	102		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1867304-3 WG1867304-4								
Methyl tert butyl ether	124		126		66-130	2		30
Benzene	106		103		70-130	3		30
1,2-Dichloroethane	104		103		70-130	1		30
Toluene	99		96		70-130	3		30
1,2-Dibromoethane	119		120		70-130	1		30
Ethylbenzene	98		95		70-130	3		30
p/m-Xylene	102		100		70-130	2		30
o-Xylene	100		98		70-130	2		30
Isopropylbenzene	91		88		70-130	3		30
1,3,5-Trimethylbenzene	91		89		70-130	2		30
1,2,4-Trimethylbenzene	92		89		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		109		70-130
Toluene-d8	97		95		70-130
4-Bromofluorobenzene	92		92		70-130
Dibromofluoromethane	106		106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 10-11 Batch: WG1867314-3 WG1867314-4								
Methyl tert butyl ether	89		88		63-130	1		20
Benzene	98		97		70-130	1		20
1,2-Dichloroethane	98		96		70-130	2		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		100		70-130	5		20
Isopropylbenzene	110		100		70-130	10		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	108		107		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	99		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 10-11 Batch: WG1868000-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 10-11	QC Batch ID: WG1868000-3	QC Sample: L2374526-10	Client ID: FB-231215-1									
1,2-Dibromoethane	ND	0.25	0.233	93		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:00
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.19	0.019	1
Phenanthrene	0.092	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.13		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.078	J	mg/kg	0.12	0.022	1
Chrysene	0.077	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.093	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.081	J	mg/kg	0.16	0.047	1
Benzo(ghi)perylene	0.043	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	65		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 09:11
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.028	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.045	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.032	J	mg/kg	0.12	0.022	1
Chrysene	0.039	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.058	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.038	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	70		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 08:21
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.037	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.033	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.022	J	mg/kg	0.11	0.021	1
Chrysene	0.022	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	66		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:25
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.035	J	mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.046	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.077	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.060	J	mg/kg	0.12	0.022	1
Chrysene	0.063	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.084	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.076	J	mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.044	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	66		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 10:50
Analyst: EK
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.18		mg/kg	0.043	0.026	1
Fluorene	ND		mg/kg	0.22	0.021	1
Phenanthrene	0.12	J	mg/kg	0.13	0.026	1
Anthracene	ND		mg/kg	0.13	0.042	1
Pyrene	0.20		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.15		mg/kg	0.13	0.024	1
Chrysene	0.17		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.23		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.21		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	81		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 09:35
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.040	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.28		mg/kg	0.12	0.024	1
Anthracene	0.057	J	mg/kg	0.12	0.039	1
Pyrene	0.48		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.28		mg/kg	0.12	0.022	1
Chrysene	0.28		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.31		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.27		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.14	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	70		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 08:46
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.039	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.056	J	mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.069	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.035	J	mg/kg	0.12	0.022	1
Chrysene	0.038	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.042	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	78		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/19/23 12:28
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.19		mg/kg	0.040	0.024	1
Fluorene	0.021	J	mg/kg	0.20	0.019	1
Phenanthrene	0.24		mg/kg	0.12	0.024	1
Anthracene	0.11	J	mg/kg	0.12	0.039	1
Pyrene	0.55		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.37		mg/kg	0.12	0.022	1
Chrysene	0.42		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.58		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.45		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.30		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	58		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/22/23 11:00
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	49		15-120
4-Terphenyl-d14	52		41-149

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/19/23 05:54
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 12/18/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-07,09 Batch: WG1865200-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	77		18-120

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/21/23 17:36
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/21/23 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 10 Batch: WG1866777-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	71		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07,09 Batch: WG1865200-2 WG1865200-3								
Naphthalene	56		61		40-140	9		50
Fluorene	56		62		40-140	10		50
Phenanthrene	57		64		40-140	12		50
Anthracene	60		66		40-140	10		50
Pyrene	62		66		35-142	6		50
Benzo(a)anthracene	57		64		40-140	12		50
Chrysene	61		68		40-140	11		50
Benzo(b)fluoranthene	62		66		40-140	6		50
Benzo(a)pyrene	69		73		40-140	6		50
Benzo(ghi)perylene	59		64		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	62		67		23-120
2-Fluorobiphenyl	57		64		30-120
4-Terphenyl-d14	67		72		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 10 Batch: WG1866777-2 WG1866777-3								
Naphthalene	58		75		40-140	26		40
Fluorene	59		76		40-140	25		40
Phenanthrene	58		74		40-140	24		40
Anthracene	59		76		40-140	25		40
Pyrene	55		68		26-127	21		40
Benzo(a)anthracene	66		86		40-140	26		40
Chrysene	61		78		40-140	24		40
Benzo(b)fluoranthene	59		74		40-140	23		40
Benzo(a)pyrene	57		72		40-140	23		40
Benzo(ghi)perylene	66		83		40-140	23		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	67		84		23-120
2-Fluorobiphenyl	61		75		15-120
4-Terphenyl-d14	55		67		41-149

METALS

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	38.0		mg/kg	2.29	0.123	1	12/19/23 14:53	12/20/23 21:32	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	36.3		mg/kg	2.24	0.120	1	12/19/23 14:53	12/20/23 21:37	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	21.8		mg/kg	2.28	0.122	1	12/19/23 14:53	12/20/23 21:42	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	40.1		mg/kg	2.32	0.124	1	12/19/23 14:53	12/20/23 21:47	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.7		mg/kg	2.63	0.141	1	12/19/23 14:53	12/20/23 21:51	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.8		mg/kg	2.36	0.126	1	12/19/23 14:53	12/20/23 21:56	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	17.2		mg/kg	2.31	0.124	1	12/19/23 14:53	12/20/23 22:24	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	350		mg/kg	2.35	0.126	1	12/19/23 14:53	12/20/23 22:28	EPA 3050B	1,6010D	TAA

Project Name: FORMER PHILADEPHIA REFINERY
Lab Number: L2374526
Project Number: P044.001.002
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-10
Client ID: FB-231215-1
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 12/15/23 18:37
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/20/23 19:10	12/21/23 07:25	EPA 3005A	1,6020B	EJF

Project Name: FORMER PHILADEPHIA REFINERY **Lab Number:** L2374526

Project Number: P044.001.002 **Report Date:** 12/26/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07,09 Batch: WG1865412-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/19/23 14:53	12/20/23 19:40	1,6010D	TAA

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10 Batch: WG1866341-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/20/23 19:10	12/21/23 07:01	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 Batch: WG1865412-2 SRM Lot Number: D122-540								
Lead, Total	100		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 10 Batch: WG1866341-2								
Lead, Total	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1865412-3 QC Sample: L2373843-01 Client ID: MS Sample												
Lead, Total	319	49.2	453	**272**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1866341-3 QC Sample: L2374526-10 Client ID: FB-231215-1												
Lead, Total	ND	530	550.3	104		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,09 QC Batch ID: WG1865412-4 QC Sample: L2373843-01 Client ID: DUP Sample						
Lead, Total	319	405	mg/kg	**24**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 10 QC Batch ID: WG1866341-4 QC Sample: L2374526-10 Client ID: FB-231215-1						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-01
Client ID: GPR251-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 14:12
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.3		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-02
Client ID: GPR250-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 16:26
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.8		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-03
Client ID: GPR251-02-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 16:08
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-04
Client ID: GPR251-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:45
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.9		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-05
Client ID: GPR251-04-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:33
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.2		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-06
Client ID: GPR250-03-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-07
Client ID: GPR250-03-SS01D
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 15:17
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2374526
Report Date: 12/26/23

SAMPLE RESULTS

Lab ID: L2374526-09
Client ID: GPR250-01-SS01
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Soil

Date Collected: 12/15/23 14:38
Date Received: 12/15/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	12/16/23 19:01	121,2540G	SJB

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADEPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2374526

Report Date: 12/26/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07,09 QC Batch ID: WG1864892-1 QC Sample: L2373100-01 Client ID: DUP Sample						
Solids, Total	68.9	69.3	%	1		20

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-01A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-01B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-01C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-01D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-01F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-02A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-02B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-02C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-02D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-02F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-03A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-03B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-03C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-03D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-03F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-04A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-04B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-04C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-04D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-04F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-05A	Vial water preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-05B	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-05C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-05D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-05F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-06A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-06B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-06C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-06D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-06F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-07A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-07B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-07C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-07D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-07F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-08A	Vial MeOH preserved	A	NA		3.9	Y	Absent		HOLD-8260HLW(14)
L2374526-08B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	HOLD-8260HLW(14)
L2374526-08C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	HOLD-8260HLW(14)
L2374526-08D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2374526-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)
L2374526-08F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HOLD-8260HLW(14)
L2374526-09A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2374526-09B	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADEPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2374526
Report Date: 12/26/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2374526-09C	Vial water preserved	A	NA		3.9	Y	Absent	16-DEC-23 10:53	PA-8260HLW(14)
L2374526-09D	Plastic 120ml unpreserved	A	NA		3.9	Y	Absent		TS(7)
L2374526-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2374526-09F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2374526-10A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-10B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14),PA-8260(14)
L2374526-10C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-10D	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2374526-10E	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374526-10F	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2374526-11A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2374526-11B	Vial HCl preserved	A	NA		3.9	Y	Absent		8011(14),PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADEPHIA REFINERY	**Lab Number:**	L2374526
Project Number:	P044.001.002	**Report Date:**	12/26/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374526

ALPHA Analytical
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 160, Princeton NJ
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
please see attached short list.
please email EDD to EDD@terraphase.com

ANALYSIS: Short List 1-5 (see attached list)

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Short List 1-5	Sample Specific Comments	TOTAL # BOTTLES
74526-01	GPR251-01-5501	12/15/23	14:12	SO	KJO	X		
02	GPR250-02-5501	12/15/23	16:26	SO	KJO	X		
03	GPR251-02-5501	12/15/23	16:08	SO	KJO	X		
04	GPR251-03-5501	12/15/23	15:45	SO	KJO	X		
05	GPR251-04-5501	12/15/23	15:33	SO	KJO	X		
06	GPR250-03-5501	12/15/23	15:17	SO	KJO	X		
07	GPR250-03-5501D	12/15/23	15:17	SO	KJO	X		
08	GPR250-01-0.5-1.0	12/15/23	14:54	SO	KJO	H		
09	GPR250-01-5501	12/15/23	14:38	SO	KJO	X		
10	FB-231215-1	12/15/23	18:37	SO	KJO	X		

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015		12/15/23 2015
Anthony Green	12/15/23 2300	Anthony Green	DEC 15 2023 2215
	12/16 0130		12/16 0130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/16/23

ALPHA Job #: L2374526

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 110, Princeton NJ
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1-5 (see attached list)	SAMPLE HANDLING	TOTAL # BOTTLES
74526-11	TB-231215-1	12/15/23	18:56	SO	CJO	X		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)
Sample Specific Comments

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/15/23 2015	Anthony Green	12/15/23 2015
Anthony Green	12/15/23 2100		DEC 15 2023 2215
	12/16/23 0730		12/16/23 0730

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

PADEP Short List 1-5:

Benzene

Cumene

1,2 – Dibromoethane

1,2 – Dichloroethane

Ethyl Benzene

Toluene

1,2,4 – Trimethylbenzene

1,3,5 – Trimethylbenzene

Methyl tert-butyl ether

Xylenes (total)

Anthracene

Benzo(a)anthracene

Benzo(a)pyrene

Benzo(b)fluoranthene

Benzo(g,h,i)perylene

Chrysene

Fluorene

Naphthalene

Phenanthrene

Pyrene

Lead

Serial_No:12262316:20

Submission Details

Details have been submitted successfully. Please review and print the Transaction Receipt for your records.

Reference : **211717**

Form Name : ABOVEGROUND STORAGE TANK CLOSURE REPORT FORM 2630-FM-BECB0514

Submitter Name : Alexander Strohl

Submitter Organization : Terraphase Engineering Inc.

Submitter Email : alexander.strohl@terraphase.com

Phone Number : (570) 447-0558

Submitted To : Southeast Regional Office

Date Submitted : 02/20/2024

Print Confirmation

From:	Nick Scala
To:	Mia Civitillo
Subject:	FW: [External] Tank Group 07A Closure Report
Date:	Wednesday, February 5, 2025 9:39:32 AM
Attachments:	image003.png

Nick Scala, P.G., LSRP
Principal Geologist
100 Canal Pointe Boulevard, Suite 110
Princeton, NJ 08540
O: 609.236.8171 ext. 92 | C: 610.580.8352
nick.scala@terraphase.com

From: Fazzino, Chelsea <cfazzino@pa.gov>
Sent: Thursday, May 2, 2024 12:18 PM
To: Nick Scala <nick.scala@terraphase.com>; Staron, Richard <rstaron@pa.gov>
Cc: Piccone, Amy <apiccone@hilcoglobal.com>; Kevin Long <kevin.long@terraphase.com>
Subject: RE: [External] Tank Group 07A Closure Report

Hi Nick,
We've reviewed your submittal and agree that this looks sufficient to demonstrate you have a clean closure for these tanks. Please include the submittal and this email within your forthcoming Site Characterization Report for Tank Group 7.

Thanks,
Chelsea

Chelsea Fazzino, P.G. | Licensed Professional Geologist
she/her/hers
Department of Environmental Protection | Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5791 | Fax: 484.250.5961
www.dep.pa.gov

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From: Nick Scala <nick.scala@terraphase.com>
Sent: Tuesday, April 16, 2024 12:10 PM
To: Fazzino, Chelsea <cfazzino@pa.gov>; Staron, Richard <rstaron@pa.gov>
Cc: Piccone, Amy <apiccone@hilcoglobal.com>; Kevin Long <kevin.long@terraphase.com>
Subject: [External] Tank Group 07A Closure Report

***ATTENTION:** This email message is from an external sender. Do not open links or*

attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.

Chelsea,

Here is a copy of the Tank Group 07A Closure report. It was originally submitted through the online portal.

Thanks!

-Nick

Nick Scala, P.G., LSRP
Principal Geologist
100 Canal Pointe Boulevard, Suite 110
Princeton, NJ 08540
O: 609.236.8171 ext. 92 | F: 510.380.6304 | C: 610.580.8352
www.terraphase.com

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Appendix B

Evergreen's Agreement Letter

Evergreen Resources Management
2 Righter Parkway, Suite 120
Wilmington, DE 19803

November 13, 2025

VIA email to cfazzino@pa.gov

Chelsea Fazzino, PG
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

Subject: Bellwether District Holdings, LLC Release Investigation Report – Tank Group 06 and Tank Group 07
3144 West Passyunk Avenue, Philadelphia, PA 19145

Dear Ms. Fazzino,

Evergreen Resources Group, LLC (Evergreen) has reviewed Terraphase Engineering Inc.'s *Release Investigation Report – Tank Group 06 and Tank Group 07*, written on behalf of Bellwether District Holdings, LLC (BDH). The data collected during BDH's investigation activities generally align with data collected by Evergreen as part of our ongoing Act 2 activities for the former refinery property and the Tank Group 06 and 07 area is being managed by Evergreen within our Act 2 Site. Available data for the Tank Group 06 and 07 area has been incorporated into recent Fate & Transport, Human Health Risk Assessment, and Cleanup Plan activities and will be considered in the forthcoming Final Report activities under primary facility ID 780190.

Regards,

Evergreen Resources Management Operations

Tiffani L. Doerr, PG

cc: Julianna Connolly (jconnolly@hilcoglobal.com)
Amy Piccone (apiccone@hilcoglobal.com)

Appendix C

Aboveground Storage Tank System Closure Report Forms

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

51-33624
Facility I.D.

Former Philadelphia Refinery Point Breeze - Tank Group 7
Facility Name

Philadelphia — Municipality
Philadelphia — County

January 17, 2023
Date Prepared

Kevin L. Long
Name of Person Submitting Report
(Please Print)

Terraphase Engineering
Company Name
(If Applicable)

Principal Consultant
Title

Closure Method (Check all that apply):

- ☒ AST Removal
- ☐ AST Closure-In-Place
- ☐ AST Change-In-Service

Site Assessment Results (Check all that apply):

- ☒ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☒ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Extensive Contamination

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

DATE RECEIVED: _____

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing aboveground storage tank systems may use this form to demonstrate that a storage tank system closure was performed in accordance with technical guidance document 263-4200-001 "Closure Requirements for Aboveground Storage Tank Systems". PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 51-33624
2. Facility Name Former Philadelphia Refinery Point Breeze - Tank Group 7
3. Facility County Philadelphia
4. Facility Municipality Philadelphia
5. Facility Address 3144 West Passyunk Avenue
6. Facility Contact Person Anne R. Garr
7. Facility Telephone Number (312) 796-6564
8. Owner Name Philadelphia Energy Solutions Refining and Marketing LLC
9. Owner Mailing Address 111 S. Wacker Dr., Ste 3000
10. Description of Aboveground Storage Tank Systems (Complete for each tank system closed)

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		- -	- -	- -	- -
Description of Aboveground Storage Tank System (Complete for each tank system undergoing closure)					
DEP Tank ID Number		See attached Table			
Total Capacity (Gallons)					
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Pure Ethanol	☐	☐	☐	☐
	Blended Ethanol _____%	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Biodiesel _____%	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Nonpetroleum Oil, Specify	_____	_____	_____	_____
	Other, Specify	_____	_____	_____	_____
NOTE: If Hazardous Substance Block is Checked, Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance	_____	_____	_____	_____
	AND				
	Chemical Abstract Service (CAS) No.	_____	_____	_____	_____
	c. Unknown	☐	☐	☐	☐

CLOSURE METHOD(s): DEP Tank ID Number:					
Partial Storage Tank System Closure		☐	☐	☐	☐
Tank ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Piping ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Dispenser ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Other _____	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐

Describe Closure Activities:

The tanks were drained via the in-place piping systems. Associated piping was also drained. Residual product was retained for use in other areas of the Former Philadelphia Refinery Complex. The interiors of tanks were cleaned. The tanks and piping were dismantled and removed from the site for disposal. When encountered, double bottoms were excavated and removed at a later date.

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of the storage tank systems:**

    Tank Group 07 was located in the south-central portion of the Former Philadelphia Refinery Complex. The tanks in the group held a variety of materials associated with the petroleum refining process.

☒ ☐ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ ☐ 13. Original, color photographs of the closure process involving any excavation are attached (i.e., inside of excavation/piping runs, pit water, containment structure and foundation showing condition).

☒ ☐ 14. An amended "Storage Tanks Registration/Permitting Application" Form was submitted to the DEP, Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: 10 / 4 / 2021

☒ ☐ 15. If a release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: 8 / 10 / 2022 Office: Southeast

Yes **N/A**

☒ ☐ 16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable product was drained from the tanks prior to cleaning. Any residual product was discharged to the on-site process sewer and wastewater treatment system.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
Tank Bottoms were stabalized prior to being transported offsite for disposal as hazardous secondary materials and shipped via railcar to Chemical Waster Management Inc at 7170 John Brannon Road, Sulphur, LA 70665. Remaining waste was discharged to the facility process sewer and wastewater treatment system.

c. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: PAD 04979109

(2) Licensed Hazardous Waste Transporter Name and ID Number: LA 0000777201, LA 000147272

☐ ☒ 17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning:

b. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
All tanks, associated piping were cleaned, demolished and recycled for scrap value.

☐ ☒ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount _____ (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

_____

Yes	N/A		
☐	☒	20.	Briefly describe the disposition of and amount _____ (tons) of uncontaminated soil and debris (attach analyses):

_____

_____

_____

☐	☒	21.	If the tanks were "Closed-in-Place" provide information below:

a. Briefly describe the tank cleaning process: _____

_____

b. If subcontracted, name and address of company that performed the tank cleaning:

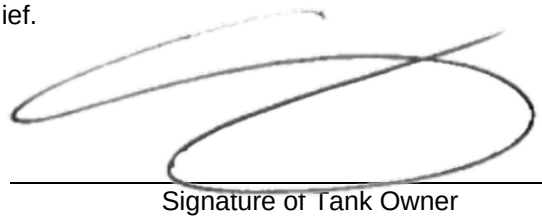
_____

c. How were tanks marked/labeled with permanent closure date: _____

_____

_____

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating
(Print Name)
to unsworn falsification to authorities) that I am the owner of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.



Signature of Tank Owner

02 / 03 / 2023
Date

Philadelphia Energy Solutions Refining and Marketing LLC
Company Name
(If applicable)

Assistant Secretary
Title

Section I - Table 1
Description of Aboveground Storage Tank System

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		10/4/2021	2/21/2022	2/21/2021	4/14/2022	10/4/2021	7/8/2022	2/21/2022	2/21/2022	2/21/2022	2/21/2022	2/21/2022	7/8/2022
Description of Aboveground Storage Tank System		(Complete for each tank system undergoing closure)											
DEP Tank ID Number		005A	006A	007A	029A	030A	033A	034A	035A	036A	037A	039A	046A
Total Capacity (Gallons)		1,016,400	84,000	84,000	1,260,000	1,016,400	26,418	84,000	105,000	105,000	84,000	84,000	42,000
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**												
	Unleaded Gasoline												
	Leaded Gasoline												
	Aviation Gasoline												
	Pure Ethanol												
	Blended Ethanol _____%												
	Kerosene												
	Jet Fuel												
	Diesel Fuel												
	Biodiesel _____%												
	Fuel Oil No. 1												
	Fuel Oil No. 2												
	Fuel Oil No. 4												
	Fuel Oil No. 5												
	Fuel Oil No. 6												
	New Motor Oil												
	Used Motor Oil												
	Nonpetroleum Oil, Specify												
	Other, Specify	Udex Feed	Benzene	Benzene	Main Frac Bottoms	Udex Feed	Caustic, Fresh	Benzene	Cumene	Cumene	Tetraethylene Glycol	Benzene	Recovered Oil
NOTE: If Hazardous Substance Block is Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**												
	Name of Principal CERCLA Substance												
	AND												
	Chemical Abstract Service (CAS) No.												
	c. Unknown												
CLOSURE METHOD(s):	DEP Tank ID Number:	005A	006A	007A	029A	030A	033A	034A	035A	036A	037A	039A	046A
Partial Storage Tank System Closure													
Tank ☐ N/A	a. Removal	X	X	X	X	X	X	X	X	X	X	X	X
	b. Closure-in-Place												
	c. Change-in-Service												
Piping ☐ N/A	a. Removal	X	X	X	X	X	X	X	X	X	X	X	X
	b. Closure-in-Place												
	c. Change-in-Service												
Dispenser ☑ N/A	a. Removal												
	b. Closure-in-Place												
	c. Change-in-Service												
Other _____	a. Removal												
	b. Closure-in-Place												
	c. Change-in-Service												

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 51 - 33624

DEP Tank ID Number(s) 005A, 006A, 007A, 029A, 030A, 033A, 034A, 035A, 036A, 037A, 039A, 046A

Yes	N/A		
		1.	Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil and debris: Removed tank and piping debris was segregated and loaded into roll-off containters during demolition.
		2.	Briefly describe the method of piping system closure and the closure of the piping systems including the quantity and condition of the piping:
		3.	Briefly describe the condition of the tanks and any problems encountered during tank handling or tank removal activities:
		4.	Briefly describe the method used to purge the tanks of and monitor for hazardous or explosive vapors:
☒	☐	5.	If tanks were cleaned on-site: a. Briefly describe the tank cleaning process: Tanks were drained, cut open, rinsed and scrubbed clean of any residuals before demolition. b. If subcontracted, name and address of company that performed the tank cleaning: NorthStar Contracting Group, Inc., 2250 East Adams Avenue, Philadelphia, PA 19124
☐	☒	6.	If tanks were “Closed-in-Place”, briefly describe how tanks were rendered inoperative, marked permanently closed with date, vented and secured to prevent unauthorized entry:
☐	☒	7.	If contamination was suspected or observed, the “Notification of Contamination” form was submitted.

I, KRISTIAN SATTERTHWAITE, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to
(Print Name)
unsworn falsification to authorities) that I am the certified remover who performed the tank handling activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Kristian Satterthwaite
Signature of Certified Remover

1 / 27 / 2023
Date

5081
Remover Certification Number

1557
Company Certification Number

JDZ ENVIRONMENTAL, INC.
Company Name

800 E. WASHINGTON STREET
Street

WEST CHESTER, PA 19380
City/Town, State, Zip

(610) 430-8151
Phone

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 029A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

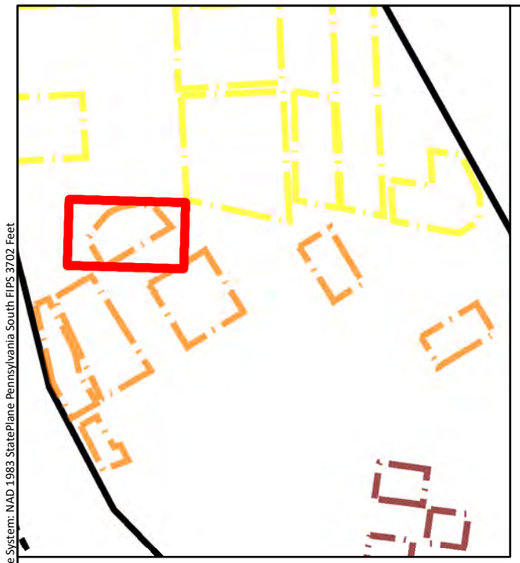
Table 4 - 029A (GP R 494)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR494-01	GPR494-01-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	9.7	1.1	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	7.7	1.4	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	3.7	1.1	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	2.5	1.4	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Chrysene	SW8270D	Soil	13	1.1	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Fluorene	SW8270D	Soil	5.2	1.8	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Naphthalene	SW8270D	Soil	1.3	1.8	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Lead	SW6010D	Soil	517	2.11	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Pyrene	SW8270D	Soil	11	1.1	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.049	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Phenanthrene	SW8270D	Soil	30	1.1	8/2/2022	8/9/2022
GPR494-01	GPR494-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.099	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.022	0.049	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.049	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.025	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.06	0.099	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.049	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.025	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.22	0.099	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.116	0.099	8/2/2022	8/5/2022
GPR494-01	GPR494-01-SS01	4.5	5	Anthracene	SW8270D	Soil	4.8	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Anthracene	SW8270D	Soil	7.1	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Benzo(a)anthracene	SW8270D	Soil	20	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Benzo(a)pyrene	SW8270D	Soil	18	1.5	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Benzo(b)fluoranthene	SW8270D	Soil	8.4	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270D	Soil	7	1.5	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Chrysene	SW8270D	Soil	34	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Fluorene	SW8270D	Soil	9	1.9	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Naphthalene	SW8270D	Soil	1.4	1.9	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Phenanthrene	SW8270D	Soil	71	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Pyrene	SW8270D	Soil	39	1.1	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Lead	SW6010D	Soil	90.3	2.21	8/2/2022	8/9/2022
GPR494-02	GPR494-02-SS01	1.5	2	Xylenes (total)	SW8260C	Soil	0.218	0.14	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	1,2-Dibromoethane	SW8260C	Soil	ND	0.036	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	1,2-Dichloroethane	SW8260C	Soil	ND	0.072	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.14	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	Cumene	SW8260C	Soil	0.63	0.072	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	Ethyl Benzene	SW8260C	Soil	0.064	0.072	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	Methyl tert-butyl ether	SW8260C	Soil	ND	0.14	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	Toluene	SW8260C	Soil	0.047	0.072	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	Benzene	SW8260C	Soil	0.037	0.036	8/2/2022	8/5/2022
GPR494-02	GPR494-02-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260C	Soil	0.061	0.14	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Pyrene	SW8270D	Soil	20	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Benzo(a)pyrene	SW8270D	Soil	7.4	0.72	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Benzo(b)fluoranthene	SW8270D	Soil	3.6	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270D	Soil	2.4	0.72	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Chrysene	SW8270D	Soil	14	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Fluorene	SW8270D	Soil	4.8	0.91	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Phenanthrene	SW8270D	Soil	29	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Benzo(a)anthracene	SW8270D	Soil	7.8	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	Toluene	SW8260C	Soil	0.00082	0.00096	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Naphthalene	SW8270D	Soil	ND	0.91	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00048	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Anthracene	SW8270D	Soil	4	0.54	8/2/2022	8/9/2022
GPR494-03	GPR494-03-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0017	0.0019	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	0.0132	0.0019	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00096	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0004	0.0019	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Benzene	SW8260C	Soil	0.0004	0.00048	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Cumene	SW8260C	Soil	0.034	0.00096	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	0.0012	0.00096	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	8/2/2022	8/5/2022
GPR494-03	GPR494-03-SS01	4	4.5	Lead	SW6010D	Soil	12.9	2.12	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Toluene	SW8260C	Soil	0.0011	0.0012	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Benzo(a)anthracene	SW8270D	Soil	3.9	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Pyrene	SW8270D	Soil	8.6	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Phenanthrene	SW8270D	Soil	1.1	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Naphthalene	SW8270D	Soil	0.36	0.93	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Fluorene	SW8270D	Soil	0.57	0.93	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Chrysene	SW8270D	Soil	9.7	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Benzo(g,h,i)perylene	SW8270D	Soil	3.5	0.75	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Benzo(b)fluoranthene	SW8270D	Soil	4.6	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Benzo(a)pyrene	SW8270D	Soil	7.4	0.75	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00061	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Anthracene	SW8270D	Soil	0.59	0.56	8/2/2022	8/9/2022
GPR494-04	GPR494-04-SS01	2	2.5	Xylenes (total)	SW8260C	Soil	0.0068	0.0024	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.001	0.0024	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0074	0.0024	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Benzene	SW8260C	Soil	0.00036	0.00061	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Cumene	SW8260C	Soil	0.0072	0.0012	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Ethyl Benzene	SW8260C	Soil	0.001	0.0012	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	8/2/2022	8/5/2022
GPR494-04	GPR494-04-SS01	2	2.5	Lead	SW6010D	Soil	238	2.14	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Toluene	SW8260C	Soil	0.089	0.14	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Pyrene	SW8270D	Soil	15	1.2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.94	2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Fluorene	SW8270D	Soil	8.1	2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Chrysene	SW8270D	Soil	16	1.2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	2.7	1.6	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	3.9	1.2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	8.7	1.6	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	11	1.2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Phenanthrene	SW8270D	Soil	36	1.2	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Lead	SW6010D	Soil	32	2.37	8/2/2022	8/9/2022
GPR494-05	GPR494-05-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.27	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.046	0.14	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Cumene	SW8260C	Soil	2.1	0.14	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.068	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.27	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.14	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.068	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.15	0.27	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.246	0.27	8/2/2022	8/5/2022
GPR494-05	GPR494-05-SS01	4.5	5	Anthracene	SW8270D	Soil	4.7	1.2	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Anthracene	SW8270D	Soil	1.8	1.1	8/2/2022	8/9/2022

Table 4 - 029A (GP R 494)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR494-06	GPR494-06-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	2.8	1.1	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	2.1	1.4	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	1.2	1.1	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Pyrene	SW8270D	Soil	2.3	1.1	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Chrysene	SW8270D	Soil	3.1	1.1	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.0084	0.0022	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.42	1.8	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.75	1.4	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Phenanthrene	SW8270D	Soil	7.6	1.1	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Lead	SW6010D	Soil	78.1	2.06	8/2/2022	8/9/2022
GPR494-06	GPR494-06-SS01	4.5	5	Toluene	SW8260C	Soil	0.0012	0.0011	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.002	0.0022	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00056	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0011	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Benzene	SW8260C	Soil	0.00059	0.00056	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Cumene	SW8260C	Soil	0.0091	0.0011	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.00067	0.0011	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0022	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0022	8/2/2022	8/8/2022
GPR494-06	GPR494-06-SS01	4.5	5	Fluorene	SW8270D	Soil	1.4	1.8	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Pyrene	SW8270D	Soil	7.8	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	2.7	0.78	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	1.1	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.7	0.78	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Chrysene	SW8270D	Soil	7	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Fluorene	SW8270D	Soil	6.6	0.98	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Phenanthrene	SW8270D	Soil	30	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	3.5	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Toluene	SW8260C	Soil	0.0043	0.0012	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.98	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00059	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.98	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00059	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Lead	SW6010D	Soil	19.3	2.28	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	Anthracene	SW8270D	Soil	2.8	0.58	8/2/2022	8/9/2022
GPR494-07	GPR494-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.018	0.0024	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.061	0.0024	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0025	0.0024	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Benzene	SW8260C	Soil	0.0005	0.00059	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Cumene	SW8260C	Soil	0.14	0.0012	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.0028	0.0012	8/2/2022	8/5/2022
GPR494-07	GPR494-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	8/2/2022	8/5/2022
GPR494-08	GPR494-08-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	18	5.4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Naphthalene	SW8270D	Soil	4.8	6.7	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.0203	0.0024	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Chrysene	SW8270D	Soil	170	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Pyrene	SW8270D	Soil	130	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	28	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	54	5.4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	71	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Anthracene	SW8270D	Soil	23	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	Phenanthrene	SW8270D	Soil	110	4	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0006	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Toluene	SW8260C	Soil	0.0057	0.0012	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Fluorene	SW8270D	Soil	11	6.7	8/2/2022	8/9/2022
GPR494-08	GPR494-08-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.012	0.0028	8/2/2022	8/5/2022
GPR494-08	GPR494-08-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0039	0.0028	8/2/2022	8/5/2022
GPR494-08	GPR494-08-SS01	3	3.5	Benzene	SW8260C	Soil	0.016	0.0006	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Cumene	SW8260C	Soil	0.0029	0.0014	8/2/2022	8/5/2022
GPR494-08	GPR494-08-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.0036	0.0012	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	8/2/2022	8/8/2022
GPR494-08	GPR494-08-SS01	3	3.5	Lead	SW6010D	Soil	114	2.26	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Fluorene	SW8270D	Soil	0.03	0.2	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.73	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	1.1	0.16	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Pyrene	SW8270D	Soil	0.84	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	1.2	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Chrysene	SW8270D	Soil	0.7	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00069	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	Naphthalene	SW8270D	Soil	0.059	0.2	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.45	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Anthracene	SW8270D	Soil	0.13	0.12	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.51	0.16	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0014	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0028	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	Cumene	SW8260C	Soil	ND	0.0014	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0028	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00069	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0028	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	Lead	SW6010D	Soil	70.9	2.36	8/2/2022	8/9/2022
GPR494-09	GPR494-09-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0014	8/2/2022	8/8/2022
GPR494-09	GPR494-09-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0028	8/2/2022	8/8/2022

Notes:
SS -- Soil Sample.



GP 496

GP 497

GP 493

GP 498

GPR494-01

GPR494-02

GPR494-04

GPR494-03

GP R 494

GPR494-06

GPR494-05

GPR494-08

GPR494-07

GPR494-09

GP 495

Legend

Tank Group

07

Previously Closed

Associated Piping

PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 029A (GP R 494)

Figure 4

File: N:\GIS\Pr\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 4 - 029A (GP R 494).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 029A (GP R 494) prior to demolition.

Photograph 2:

View of Tank 029A (GP R 494) during demolition.

Photograph 3:

View of Tank 029A (GP R 494) during demolition.

Product Movement and Waste Disposal Documentation (Tank 029A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 046A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

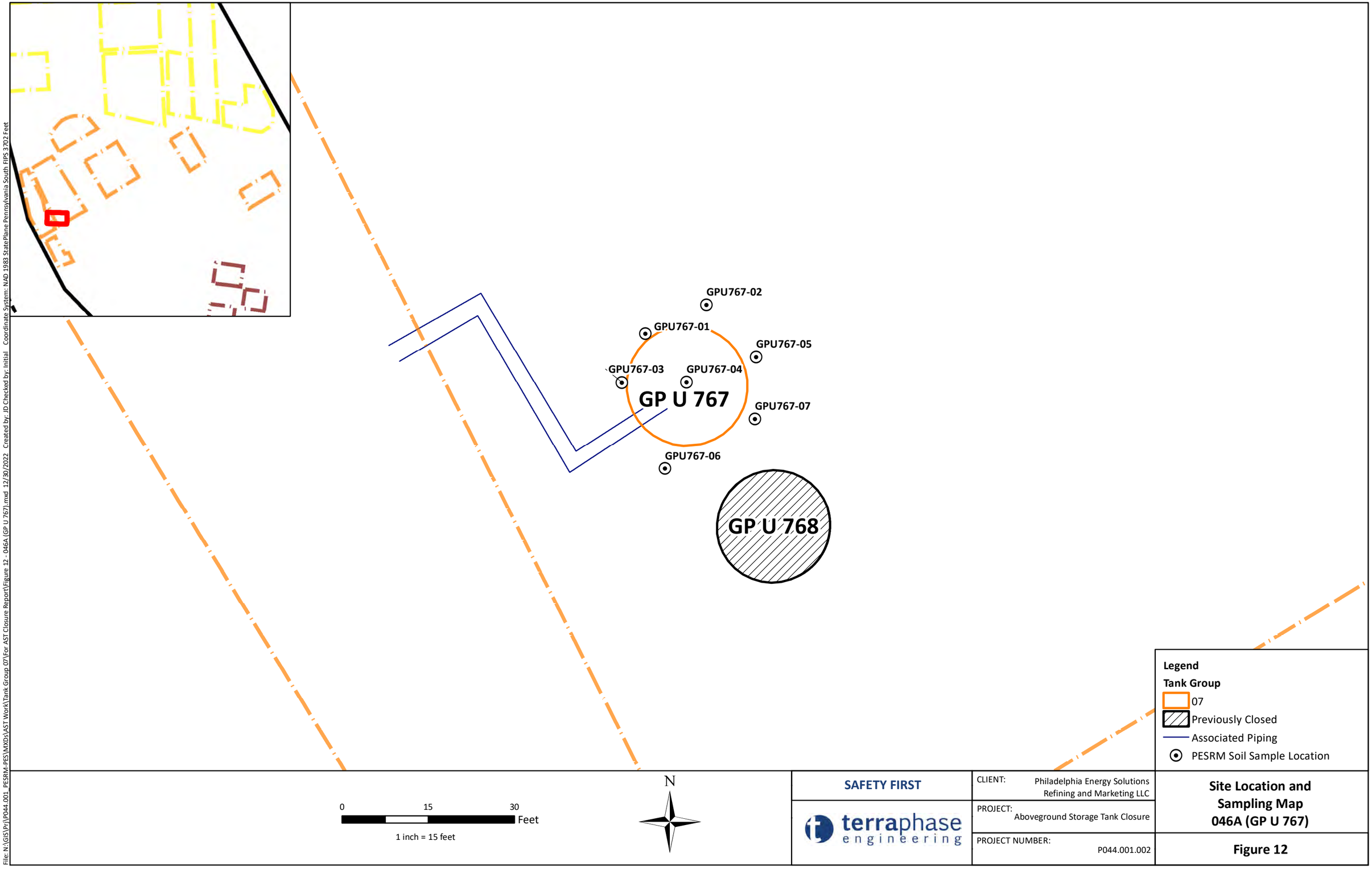
Table 12 - 046A (GP U 767)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPU767-01	GPU767-01-SS01	3	3.5	Phenanthrene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.044	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.07	0.15	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.1	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.076	0.15	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Chrysene	SW8270D	Soil	0.046	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.19	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.19	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Pyrene	SW8270D	Soil	0.032	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0028	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	0.077	0.15	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0028	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-01	GPU767-01-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00069	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Lead	SW6010D	Soil	380	2.2	8/15/2022	8/22/2022
GPU767-01	GPU767-01-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0028	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00069	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Cumene	SW8260C	Soil	0.0011	0.0014	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0014	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.0014	8/15/2022	8/17/2022
GPU767-01	GPU767-01-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0028	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Chrysene	SW8270D	Soil	0.12	0.12	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.14	0.16	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.15	0.12	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Benzene	SW8260C	Soil	0.00007	0.00008	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.077	0.16	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Fluorene	SW8270D	Soil	0.085	0.2	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	0.091	0.16	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.048	0.2	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Pyrene	SW8270D	Soil	0.18	0.12	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.12	0.12	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.24	0.12	8/15/2022	8/20/2022
GPU767-02	GPU767-02-SS01	4.5	5	Lead	SW6010D	Soil	115	2.3	8/15/2022	8/22/2022
GPU767-02	GPU767-02-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.00037	0.00035	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Toluene	SW8260C	Soil	0.00018	0.00018	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.00035	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Cumene	SW8260C	Soil	0.0093	0.00018	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.00016	0.00018	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0001	0.00035	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00018	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00008	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.00027	0.00035	8/15/2022	8/17/2022
GPU767-02	GPU767-02-SS01	4.5	5	Anthracene	SW8270D	Soil	0.058	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	0.16	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.16	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Chrysene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Fluorene	SW8270D	Soil	ND	0.2	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	ND	0.16	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.2	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Pyrene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.071	0.13	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	Phenanthrene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00095	8/15/2022	8/17/2022
GPU767-03	GPU767-03-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-03	GPU767-03-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00048	8/15/2022	8/17/2022
GPU767-03	GPU767-03-SS01	4.5	5	Lead	SW6010D	Soil	72	2.3	8/15/2022	8/22/2022
GPU767-03	GPU767-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.016	0.13	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	Benzene	SW8260C	Soil	0.071	0.034	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	Cumene	SW8260C	Soil	1.6	0.067	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.03	0.067	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	8/15/2022	8/17/2022
GPU767-03	GPU767-03-SS01	4.5	5	Toluene	SW8260C	Soil	0.052	0.067	8/15/2022	8/18/2022
GPU767-03	GPU767-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.032	0.13	8/15/2022	8/18/2022
GPU767-04	GPU767-04-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.064	0.16	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Pyrene	SW8270D	Soil	0.09	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.049	0.16	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.054	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Chrysene	SW8270D	Soil	0.093	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Fluorene	SW8270D	Soil	ND	0.19	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	ND	0.16	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Phenanthrene	SW8270D	Soil	ND	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.1755	0.14	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	0.19	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.036	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Toluene	SW8260C	Soil	0.17	0.071	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.037	0.12	8/15/2022	8/20/2022
GPU767-04	GPU767-04-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.037	0.14	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.071	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.14	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Benzene	SW8260C	Soil	0.021	0.036	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Cumene	SW8260C	Soil	4.8	0.071	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.047	0.071	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.14	8/15/2022	8/17/2022
GPU767-04	GPU767-04-SS01	4.5	5	Lead	SW6010D	Soil	121	2.22	8/15/2022	8/22/2022
GPU767-05	GPU767-05-SS01	4	4.5	Pyrene	SW8270D	Soil	0.022	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.025	0.15	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Anthracene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.15	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Chrysene	SW8270D	Soil	0.024	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Fluorene	SW8270D	Soil	ND	0.18	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	ND	0.15	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Phenanthrene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	0.211	0.12	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	Naphthalene	SW8270D	Soil	ND	0.18	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.029	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	Benzo(a)anthracene	SW8270D	Soil	ND	0.11	8/15/2022	8/20/2022
GPU767-05	GPU767-05-SS01	4	4.5	Toluene	SW8260C	Soil	0.062	0.059	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.075	0.12	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.059	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.017	0.12	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	Benzene	SW8260C	Soil	0.044	0.029	8/15/2022	8/17/2022

Table 12 - 046A (GP U 767)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPU767-05	GPU767-05-SS01	4	4.5	Cumene	SW8260C	Soil	24	0.24	8/15/2022	8/18/2022
GPU767-05	GPU767-05-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	0.12	0.059	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.12	8/15/2022	8/17/2022
GPU767-05	GPU767-05-SS01	4	4.5	Lead	SW6010D	Soil	12.5	2.23	8/15/2022	8/22/2022
GPU767-06	GPU767-06-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.0019	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.56	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Anthracene	SW8270D	Soil	0.053	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Pyrene	SW8270D	Soil	0.34	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.42	0.14	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.29	0.14	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Chrysene	SW8270D	Soil	0.38	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Fluorene	SW8270D	Soil	0.03	0.18	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	0.35	0.14	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.19	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Naphthalene	SW8270D	Soil	0.068	0.18	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.00094	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.33	0.1	8/15/2022	8/20/2022
GPU767-06	GPU767-06-SS01	3	3.5	Lead	SW6010D	Soil	688	2.05	8/15/2022	8/22/2022
GPU767-06	GPU767-06-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0019	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00047	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.00094	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00047	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Cumene	SW8260C	Soil	0.001	0.00094	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.00094	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0019	8/15/2022	8/17/2022
GPU767-06	GPU767-06-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0019	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Phenanthrene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.14	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.14	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Chrysene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.17	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Pyrene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.17	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.004	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Indeno(1,2,3-cd)pyrene	SW8270D	Soil	ND	0.14	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.004	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	ND	0.1	8/15/2022	8/20/2022
GPU767-07	GPU767-07-SS01	3	3.5	Lead	SW6010D	Soil	87	2.01	8/15/2022	8/22/2022
GPU767-07	GPU767-07-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.001	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.002	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.004	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Cumene	SW8260C	Soil	0.00049	0.002	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.002	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.004	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.002	8/15/2022	8/17/2022
GPU767-07	GPU767-07-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.001	8/15/2022	8/17/2022

Notes:
SS -- Soil Sample.



File: N:\GIS\Pr\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 12 - 046A (GP U 767).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 046A (GP U 767)

Figure 12

Product Movement and Waste Disposal Documentation (Tank 046A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 034A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 006A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

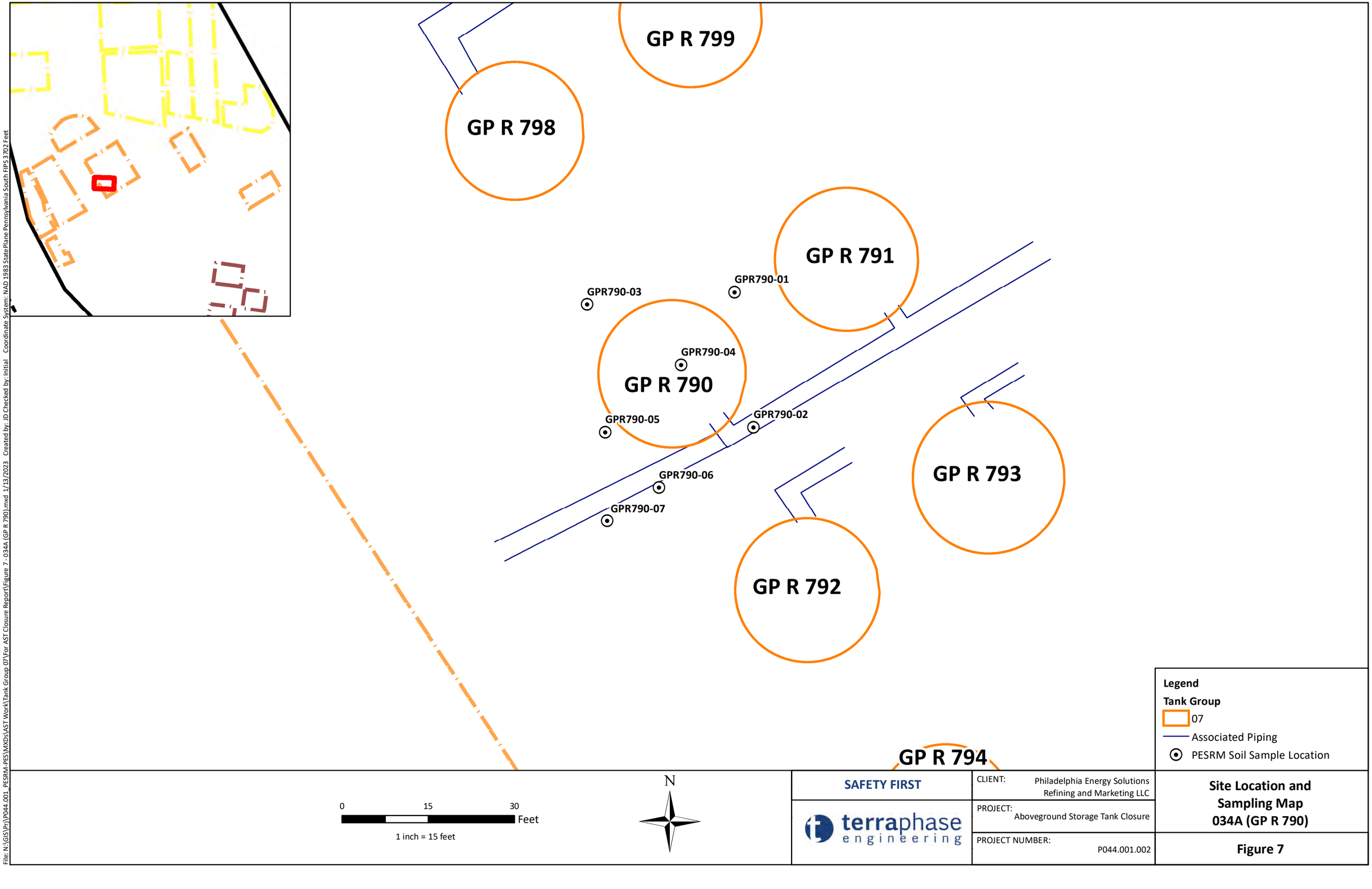
County:

Township/Borough: See attached Figure

Table 7 - 034A (GP R 790)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR790-01	GPR790-01-SS01	4.5	5	Benzene	SW8260C	Soil	520	3.4	8/1/2022	8/3/2022
GPR790-02	GPR790-02-SS01	4.5	5	Benzene	SW8260C	Soil	130	0.3	8/1/2022	8/3/2022
GPR790-03	GPR790-03-SS01	4.5	5	Benzene	SW8260C	Soil	2.8	0.26	8/1/2022	8/3/2022
GPR790-04	GPR790-04-SS01	3	3.5	Benzene	SW8260C	Soil	0.2	0.59	8/1/2022	8/3/2022
GPR790-05	GPR790-05-SS01	4.5	5	Benzene	SW8260C	Soil	3000	26	8/1/2022	8/3/2022
GPR790-06	GPR790-06-SS01	4.5	5	Benzene	SW8260C	Soil	4.6	0.42	8/1/2022	8/3/2022
GPR790-07	GPR790-07-SS01	4.5	5	Benzene	SW8260C	Soil	34	6.5	8/1/2022	8/3/2022

Notes:
SS -- Soil Sample.



SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 034A (GP R 790)

Figure 7

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 7 - 034A (GP R 790).mxd 1/13/2023 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 034A (GP R 790) prior to demolition.

Product Movement and Waste Disposal Documentation (Tank 034A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 035A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2/ 1 /2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

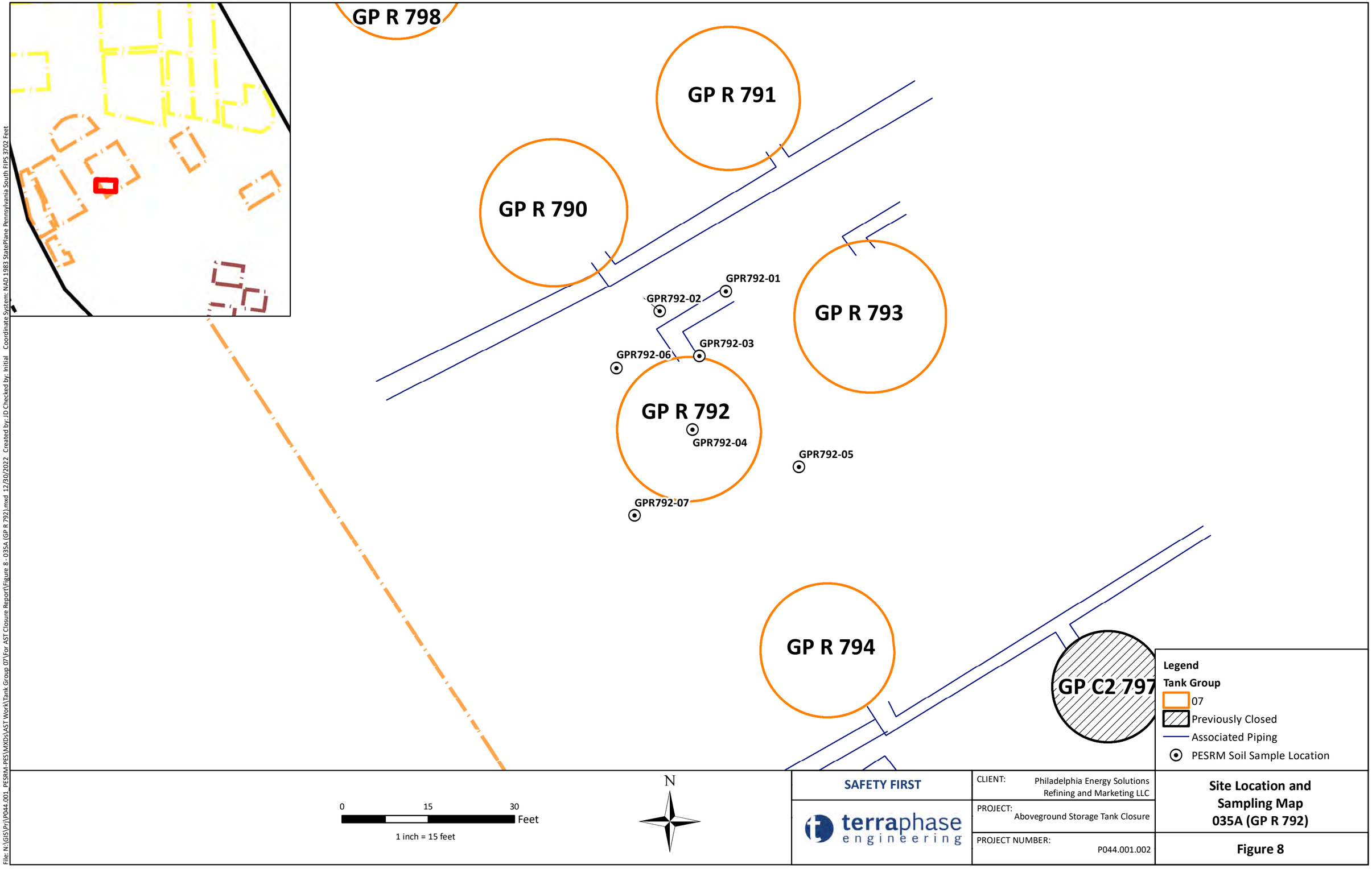
County:

Township/Borough: See attached Figure

Table 8 - 035A (GP R 792)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR792-01	GPR792-01-SS01	4	4.5	Cumene	SW8260C	Soil	2400	15	8/2/2022	8/5/2022
GPR792-02	DUP-49	4.5	5	Cumene	SW8260C	Soil	4700	59	8/2/2022	8/5/2022
GPR792-02	GPR792-02-SS01	4.5	5	Cumene	SW8260C	Soil	4700	49	8/2/2022	8/5/2022
GPR792-03	GPR792-03-SS01	4.5	5	Cumene	SW8260C	Soil	12000	88	8/2/2022	8/5/2022
GPR792-04	GPR792-04-SS01	4.5	5	Cumene	SW8260C	Soil	5000	54	8/2/2022	8/5/2022
GPR792-05	GPR792-05-SS01	4.5	5	Cumene	SW8260C	Soil	8900	65	8/2/2022	8/5/2022
GPR792-06	GPR792-06-SS01	4.5	5	Cumene	SW8260C	Soil	4600	70	8/2/2022	8/5/2022
GPR792-07	GPR792-07-SS01	3.5	4	Cumene	SW8260C	Soil	1400	12	8/2/2022	8/5/2022

Notes:
SS -- Soil Sample.
DUP-49 is a field duplicate associated with sample GPR792-02-SS01.



SAFETY FIRST

terraphase engineering

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	Aboveground Storage Tank Closure
PROJECT NUMBER:	P044.001.002

Site Location and Sampling Map 035A (GP R 792)

Figure 8

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 8 - 035A (GP R 792).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 035A (GP R 792) prior to demolition.

Photograph 2:

View of Tank 035A (GP R 792) during demolition.

Product Movement and Waste Disposal Documentation (Tank 035A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 036A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

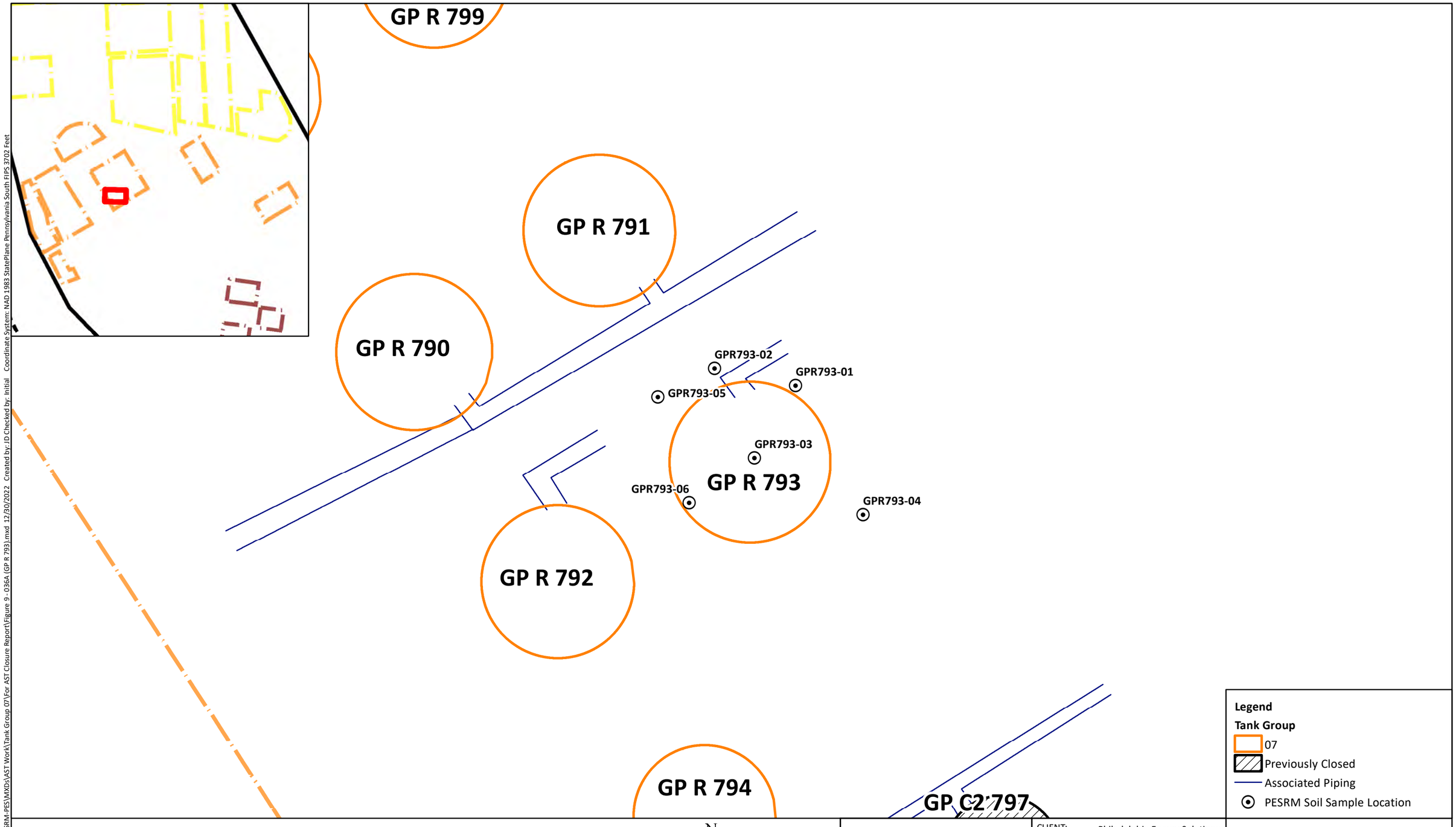
County:

Township/Borough: See attached Figure

Table 9 - 036A (GP R 793)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR793-01	GPR793-01-SS01	4	4.5	Cumene	SW8260C	Soil	5500	92	8/2/2022	8/6/2022
GPR793-02	GPR793-02-SS01	4	4.5	Cumene	SW8260C	Soil	11000	100	8/2/2022	8/5/2022
GPR793-03	GPR793-03-SS01	4.5	5	Cumene	SW8260C	Soil	15000	120	8/2/2022	8/5/2022
GPR793-04	GPR793-04-SS01	4.5	5	Cumene	SW8260C	Soil	14000	110	8/2/2022	8/5/2022
GPR793-05	GPR793-05-SS01	4.5	5	Cumene	SW8260C	Soil	1900	9.2	8/2/2022	8/5/2022
GPR793-06	GPR793-06-SS01	3.5	5	Cumene	SW8260C	Soil	1800	11	8/2/2022	8/5/2022

Notes:
SS -- Soil Sample.



Legend

Tank Group

07

Previously Closed

Associated Piping

PESRM Soil Sample Location

0 15 30 Feet

1 inch = 15 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 036A (GP R 793)

Figure 9

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 9 - 036A (GP R 793).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Product Movement and Waste Disposal Documentation (Tank 036A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 037A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2/ 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 10 - 037A (GP R 794)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR794-01	GPR794-01R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.5	10/21/2022	11/4/2022
GPR794-01	GPR794-01-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.27	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	1.5	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	1.5	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Chrysene	SW8270D	Soil	0.35	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Fluorene	SW8270D	Soil	2	1.9	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Naphthalene	SW8270D	Soil	3.5	1.9	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Pyrene	SW8270D	Soil	0.71	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	74	2.3	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	Anthracene	SW8270D	Soil	0.51	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Phenanthrene	SW8270D	Soil	8.7	1.2	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Lead	SW6010D	Soil	408	2.32	8/3/2022	8/9/2022
GPR794-01	GPR794-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	4.6	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	Toluene	SW8260C	Soil	3400	29	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Cumene	SW8260C	Soil	4000	29	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	Benzene	SW8260C	Soil	2200	14	8/3/2022	8/10/2022
GPR794-01	GPR794-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	16	4.6	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	2.3	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	1.2	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	32	4.6	8/3/2022	8/8/2022
GPR794-01	GPR794-01-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	295	4.6	8/3/2022	8/10/2022
GPR794-02	GPR794-02R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.9	10/21/2022	11/4/2022
GPR794-02	GPR794-02-SS01	4.5	5	Toluene	SW8260C	Soil	1200	4.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Naphthalene	SW8270D	Soil	1	2.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Fluorene	SW8270D	Soil	0.47	2.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Chrysene	SW8270D	Soil	0.44	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	1.7	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.47	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	1.7	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.46	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Pyrene	SW8270D	Soil	0.86	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Phenanthrene	SW8270D	Soil	2.9	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	2.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	1.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	111	8.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	8.4	8.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	4.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	3.9	8.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Benzene	SW8260C	Soil	2800	8.3	8/3/2022	8/8/2022
GPR794-02	GPR794-02-SS01	4.5	5	Cumene	SW8260C	Soil	3000	16	8/3/2022	8/8/2022
GPR794-02	GPR794-02-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	26	4.1	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	8.3	8/3/2022	8/10/2022
GPR794-02	GPR794-02-SS01	4.5	5	Lead	SW6010D	Soil	347	2.56	8/3/2022	8/9/2022
GPR794-03	GPR794-03R-SS01	3	3.5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.9	10/21/2022	11/4/2022
GPR794-03	GPR794-03-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.073	0.0018	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.038	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.065	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Chrysene	SW8270D	Soil	0.038	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.18	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.18	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.037	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.049	0.14	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Pyrene	SW8270D	Soil	0.049	0.11	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Lead	SW6010D	Soil	24.2	2.2	8/3/2022	8/9/2022
GPR794-03	GPR794-03-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.03	0.14	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.004	0.0018	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00045	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0009	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0024	0.0018	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	Cumene	SW8260C	Soil	0.38	0.055	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Toluene	SW8260C	Soil	0.21	0.055	8/3/2022	8/10/2022
GPR794-03	GPR794-03-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.02	0.0009	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0018	8/3/2022	8/8/2022
GPR794-03	GPR794-03-SS01	3	3.5	Benzene	SW8260C	Soil	0.41	0.028	8/3/2022	8/10/2022
GPR794-04	GPR794-04R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.9	10/21/2022	11/4/2022
GPR794-04	GPR794-04-SS01	4.5	5	Pyrene	SW8270D	Soil	2	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.48	1.5	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.78	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.41	1.5	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Chrysene	SW8270D	Soil	1.4	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Fluorene	SW8270D	Soil	1	1.9	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Phenanthrene	SW8270D	Soil	1.9	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.64	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Toluene	SW8260C	Soil	6100	87	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Naphthalene	SW8270D	Soil	3.1	1.9	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	79	35	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Anthracene	SW8270D	Soil	0.46	1.2	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Lead	SW6010D	Soil	63.8	2.34	8/3/2022	8/9/2022
GPR794-04	GPR794-04-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	525	35	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	8.7	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	17	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	35	35	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Benzene	SW8260C	Soil	7800	43	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Cumene	SW8260C	Soil	12000	87	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	120	17	8/3/2022	8/10/2022
GPR794-04	GPR794-04-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	35	8/3/2022	8/10/2022
GPR794-05	GPR794-05R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.3	10/21/2022	11/4/2022
GPR794-05	GPR794-05-SS01	4.5	5	Toluene	SW8260C	Soil	1800	27	8/3/2022	8/8/2022
GPR794-05	GPR794-05-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.035	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Pyrene	SW8270D	Soil	0.058	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.43	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Naphthalene	SW8270D	Soil	1.7	0.2	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Fluorene	SW8270D	Soil	0.17	0.2	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Chrysene	SW8270D	Soil	0.033	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.16	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	0.16	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	7.7	6.7	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Lead	SW6010D	Soil	23.6	2.35	8/3/2022	8/9/2022
GPR794-05	GPR794-05-SS01	4.5	5	Anthracene	SW8270D	Soil	0.07	0.12	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	6.7	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	31	3.4	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Cumene	SW8260C	Soil	2500	27	8/3/2022	8/8/2022
GPR794-05	GPR794-05-SS01	4.5	5	Benzene	SW8260C	Soil	2600	13	8/3/2022	8/8/2022

Table 10 - 037A (GP R 794)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR794-05	GPR794-05-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	3.5	6.7	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	3.4	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	1.7	8/3/2022	8/10/2022
GPR794-05	GPR794-05-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	135	6.7	8/3/2022	8/8/2022
GPR794-06	GPR794-06R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.1	10/21/2022	11/4/2022
GPR794-06	GPR794-06-SS01	4.5	5	Toluene	SW8260C	Soil	4300	59	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Naphthalene	SW8270D	Soil	6.3	1.9	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Fluorene	SW8270D	Soil	1.4	1.9	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Chrysene	SW8270D	Soil	0.35	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	1.5	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.36	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	1.5	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.41	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Pyrene	SW8270D	Soil	0.94	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Phenanthrene	SW8270D	Soil	3	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	5.9	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	Anthracene	SW8270D	Soil	0.67	1.1	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	490	24	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	48	24	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	12	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	23	24	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	Benzene	SW8260C	Soil	2000	5.9	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	Cumene	SW8260C	Soil	4800	59	8/3/2022	8/10/2022
GPR794-06	GPR794-06-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	110	12	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	24	8/3/2022	8/8/2022
GPR794-06	GPR794-06-SS01	4.5	5	Lead	SW6010D	Soil	429	2.2	8/3/2022	8/9/2022
GPR794-07	GPR794-07R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.7	10/21/2022	11/4/2022
GPR794-07	GPR794-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.034	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.027	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	0.15	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.15	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Pyrene	SW8270D	Soil	0.077	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Fluorene	SW8270D	Soil	ND	0.18	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	3.325	0.89	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Chrysene	SW8270D	Soil	0.041	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.19	0.11	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.054	0.18	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Toluene	SW8260C	Soil	8.7	0.45	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Lead	SW6010D	Soil	3.73	2.21	8/3/2022	8/9/2022
GPR794-07	GPR794-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.81	0.89	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.22	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.45	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Benzene	SW8260C	Soil	130	0.22	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Cumene	SW8260C	Soil	330	2.2	8/3/2022	8/8/2022
GPR794-07	GPR794-07-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	1.5	0.45	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.89	8/3/2022	8/10/2022
GPR794-07	GPR794-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.2	0.89	8/3/2022	8/10/2022
GPR794-08	GPR794-08R-SS01	4.5	5	Tetraethylene Glycol	SW8015D(M)	Soil	ND	9.3	10/21/2022	11/4/2022
GPR794-08	GPR794-08-SS01	4.5	5	Pyrene	SW8270D	Soil	0.28	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	1.6	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	1.6	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Chrysene	SW8270D	Soil	ND	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Fluorene	SW8270D	Soil	0.75	2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Phenanthrene	SW8270D	Soil	2.3	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	476	3	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Naphthalene	SW8270D	Soil	8.7	2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	15	3	8/3/2022	8/8/2022
GPR794-08	GPR794-08-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	ND	1.2	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	35	3	8/3/2022	8/8/2022
GPR794-08	GPR794-08-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	1.5	8/3/2022	8/8/2022
GPR794-08	GPR794-08-SS01	4.5	5	Benzene	SW8260C	Soil	12000	30	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Cumene	SW8260C	Soil	7600	60	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	120	1.5	8/3/2022	8/8/2022
GPR794-08	GPR794-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	3	8/3/2022	8/8/2022
GPR794-08	GPR794-08-SS01	4.5	5	Lead	SW6010D	Soil	132	2.4	8/3/2022	8/9/2022
GPR794-08	GPR794-08-SS01	4.5	5	Toluene	SW8260C	Soil	6200	60	8/3/2022	8/10/2022
GPR794-08	GPR794-08-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.76	8/3/2022	8/8/2022

Notes:
SS -- Soil Sample.

GP R 793

GP R 792

GPR794-09

GPR794-04

GPR794-02

GPR794-01

GP R 794

GPR794-05

GPR794-06

GPR794-03

GP C2 797

GPR794-07

GPR794-08

GP R 796

Legend

Tank Group

07

Previously Closed

Associated Piping

PESRM Soil Sample Location

0 15 30 Feet

1 inch = 15 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 037A (GP R 794)

Figure 10

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 10 - 037A (GP R 794).mxd 1/13/2023 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 037A (GP R 794) prior to demolition.

Product Movement and Waste Disposal Documentation (Tank 037A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 007A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills): _____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills): _____

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

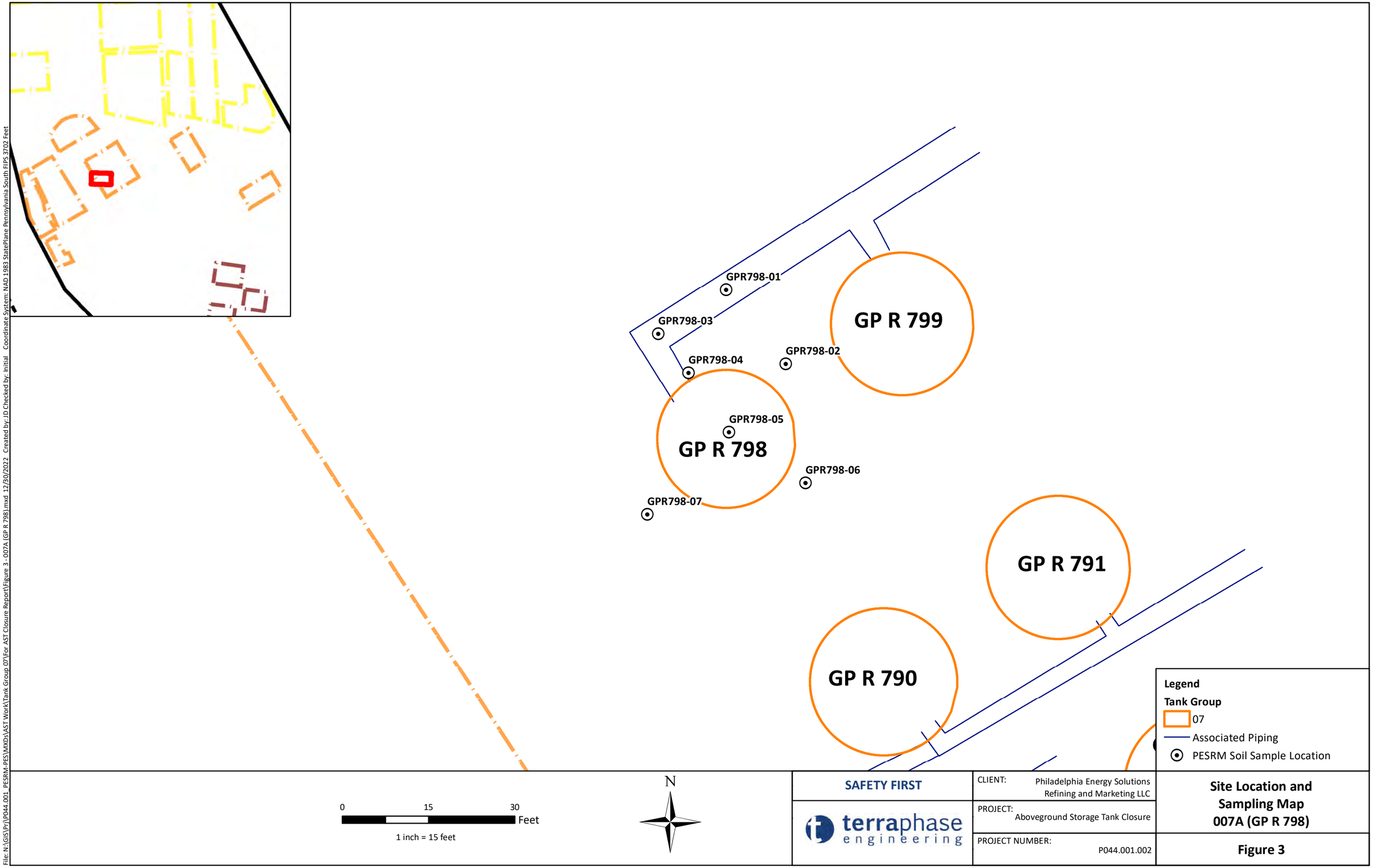
County:

Township/Borough: See attached Figure

Table 3 - 007A (GP R 798)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR798-01	GPR798-01-SS01	4.5	5	Benzene	SW8260C	Soil	3.4	0.094	7/18/2022	7/19/2022
GPR798-02	GPR798-02-SS01	4.5	5	Benzene	SW8260C	Soil	6.2	0.12	7/18/2022	7/19/2022
GPR798-03	GPR798-03-SS01	4	4.5	Benzene	SW8260C	Soil	0.4	0.069	7/18/2022	7/19/2022
GPR798-04	DUP-47	4.5	5	Benzene	SW8260C	Soil	5900	58	7/18/2022	7/20/2022
GPR798-04	GPR798-04-SS01	4.5	5	Benzene	SW8260C	Soil	14	0.43	7/18/2022	7/20/2022
GPR798-05	GPR798-05-SS01	4.5	5	Benzene	SW8260C	Soil	1.4	0.052	7/18/2022	7/19/2022
GPR798-06	GPR798-06-SS01	4	4.5	Benzene	SW8260C	Soil	2.2	0.13	7/18/2022	7/20/2022
GPR798-07	GPR798-07-SS01	4	4.5	Benzene	SW8260C	Soil	7.8	0.1	7/18/2022	7/19/2022

Notes:
SS -- Soil Sample.



SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 007A (GP R 798)

Figure 3

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 3 - 007A (GP R 798).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 007A (GP R 798) prior to demolition.

Product Movement and Waste Disposal Documentation (Tank 007A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 039A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

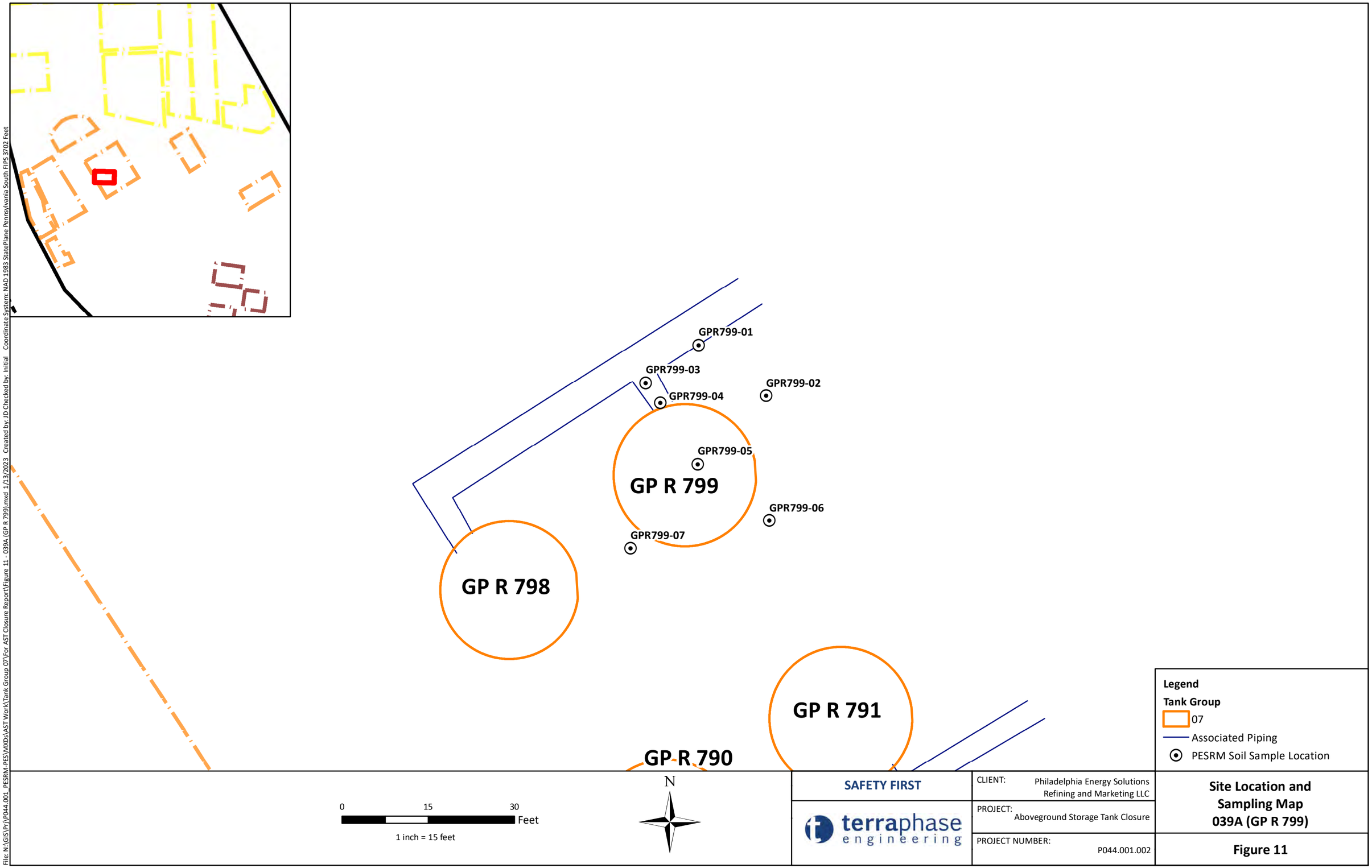
County:

Township/Borough: See attached Figure

Table 11 - 039A (GP R 799)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR799-01	GPR799-01-SS01	4	4.5	Benzene	SW8260C	Soil	2.2	0.27	7/18/2022	7/20/2022
GPR799-02	GPR799-02-SS01	4	4.5	Benzene	SW8260C	Soil	1.6	0.056	7/18/2022	7/19/2022
GPR799-03	GPR799-03-SS01	4	4.5	Benzene	SW8260C	Soil	16	0.45	7/18/2022	7/20/2022
GPR799-04	GPR799-04-SS01	4	4.5	Benzene	SW8260C	Soil	22	0.22	7/18/2022	7/19/2022
GPR799-05	GPR799-05-SS01	4	4.5	Benzene	SW8260C	Soil	2.7	0.046	7/18/2022	7/19/2022
GPR799-06	GPR799-06-SS01	4.5	5	Benzene	SW8260C	Soil	1.3	0.052	7/18/2022	7/19/2022
GPR799-07	GPR799-07-SS01	4.5	5	Benzene	SW8260C	Soil	0.71	0.1	7/18/2022	7/19/2022

Notes:
SS -- Soil Sample.



Legend

Tank Group

07

Associated Piping

PESRM Soil Sample Location

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 039A (GP R 799)

Figure 11

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 11 - 039A (GP R 799).mxd 1/13/2023 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 039A (GP R 799) prior to demolition.

Product Movement and Waste Disposal Documentation (Tank 039A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 033A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

_____

_____

_____

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long
Signature of Person Performing Site Assessment

2/ 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 6 - 033A (GP R 1088)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (SU)	Detection Limit (SU)	Date Sample Taken	Date Sample Analyzed
GPR1088-01	GPR1088-01-SS01	3	3.5	pH	SW9045D	Soil	8.5	0	8/2/2022	8/5/2022
GPR1088-02	GPR1088-02-SS01	3	3.5	pH	SW9045D	Soil	8	0	8/2/2022	8/5/2022
GPR1088-03	GPR1088-03-SS01	3	3.5	pH	SW9045D	Soil	8	0	8/2/2022	8/5/2022
GPR1088-04	GPR1088-04-SS01	3	3.5	pH	SW9045D	Soil	6.2	0	8/3/2022	8/8/2022
GPR1088-05	GPR1088-05-SS01	3	3.5	pH	SW9045D	Soil	8.9	0	8/3/2022	8/8/2022
GPR1088-06	GPR1088-06-SS01	3	3.5	pH	SW9045D	Soil	6.7	0	8/3/2022	8/8/2022

Notes:
SS -- Soil Sample.

GPR1088-01

GP R 1088

GPR1088-02

GPR1088-03

GPR1088-05

GPR1088-04

GPR1088-06

Legend

Tank Group

07

Associated Piping

PESRM Soil Sample Location

0 15 30 Feet

1 inch = 15 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 033A (GP R 1088)

Figure 6

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 6 - 033A (GP R 1088).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

	Photograph 1: View of Tank 033A (GP R 1088) prior to demolition.
	Photograph 2: View of Tank 033A (GP R 1088) piping prior to demolition.

Product Movement and Waste Disposal Documentation (Tank 033A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 21575

Date: 06-29-22

Scrap

Sold to: Allegheny

Location: Tank 767.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 63516 lbs

Tare Weight: 40196 lbs

Net Weight: 23060 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20037354
Date: 06/29/2022 9:06 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 167330.526
Loads: 10949

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	11.53 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	63540.00	40480.00	23060.00

21575

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 030A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2/ 1 /2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 7 - 030A (GP R 1116)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1116-01	GPR1116-01-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.33	0.2	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Lead	SW6010D	Soil	19.4	2.87	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Pyrene	SW8270D	Soil	0.49	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.32	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Naphthalene	SW8270D	Soil	0.94	0.24	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Chrysene	SW8270D	Soil	0.42	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.57	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.58	0.2	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.38	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Anthracene	SW8270D	Soil	0.14	0.15	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00073	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Fluorene	SW8270D	Soil	0.11	0.24	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.026	0.0029	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.042	0.0029	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0015	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.016	0.0029	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Cumene	SW8260C	Soil	0.028	0.0015	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.0012	0.0015	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0029	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Toluene	SW8260C	Soil	0.00081	0.0015	7/18/2022	7/20/2022
GPR1116-01	GPR1116-01-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00073	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Phenanthrene	SW8270D	Soil	0.94	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Benzo(a)anthracene	SW8270D	Soil	0.81	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Benzo(a)pyrene	SW8270D	Soil	1.2	0.24	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Benzo(b)fluoranthene	SW8270D	Soil	1.1	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.54	0.24	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Chrysene	SW8270D	Soil	0.92	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Pyrene	SW8270D	Soil	1.2	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Naphthalene	SW8270D	Soil	2	0.3	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00097	0.0037	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Anthracene	SW8270D	Soil	0.34	0.18	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Fluorene	SW8270D	Soil	0.35	0.3	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.029	0.0037	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Cumene	SW8260C	Soil	0.0091	0.0018	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Lead	SW6010D	Soil	97.8	3.52	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	0.0215	0.0037	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00092	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Benzene	SW8260C	Soil	0.017	0.00092	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	0.0031	0.0018	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0037	7/18/2022	7/20/2022
GPR1116-02	GPR1116-02-SS01	4	4.5	Toluene	SW8260C	Soil	0.02	0.0018	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00056	0.0029	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Anthracene	SW8270D	Soil	0.3	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Phenanthrene	SW8270D	Soil	1.5	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.52	0.24	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Fluorene	SW8270D	Soil	0.75	0.24	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Chrysene	SW8270D	Soil	0.77	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.22	0.19	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.49	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.42	0.19	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.39	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Pyrene	SW8270D	Soil	0.68	0.14	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0095	0.0029	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Toluene	SW8260C	Soil	0.0008	0.0014	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0029	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.0004	0.0014	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Lead	SW6010D	Soil	1360	2.83	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Benzene	SW8260C	Soil	0.0012	0.00072	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00072	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Cumene	SW8260C	Soil	0.015	0.0014	7/18/2022	7/20/2022
GPR1116-03	GPR1116-03-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.00395	0.0029	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Anthracene	SW8270D	Soil	0.28	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.66	0.16	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.67	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.52	0.16	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Chrysene	SW8270D	Soil	0.52	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Fluorene	SW8270D	Soil	0.16	0.2	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.52	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.015	0.0023	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Pyrene	SW8270D	Soil	0.54	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Naphthalene	SW8270D	Soil	2.8	0.2	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00059	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.49	0.12	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Toluene	SW8260C	Soil	0.0017	0.0012	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.022	0.0023	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0089	0.0023	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Benzene	SW8260C	Soil	0.00056	0.00059	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Cumene	SW8260C	Soil	0.024	0.0012	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.001	0.0012	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0023	7/18/2022	7/20/2022
GPR1116-04	GPR1116-04-SS01	4.5	5	Lead	SW6010D	Soil	20.2	2.31	7/18/2022	7/20/2022
GPR1116-05	DUP-48	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0012	0.0035	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.028	0.18	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.04	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.18	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.042	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Chrysene	SW8270D	Soil	0.044	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Fluorene	SW8270D	Soil	0.087	0.23	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Naphthalene	SW8270D	Soil	0.16	0.23	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Phenanthrene	SW8270D	Soil	0.19	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Anthracene	SW8270D	Soil	ND	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Pyrene	SW8270D	Soil	0.1	0.14	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0038	0.0035	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Toluene	SW8260C	Soil	ND	0.0018	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0035	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.0018	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Lead	SW6010D	Soil	206	13.4	8/1/2022	8/8/2022
GPR1116-05	DUP-48	3	3.5	Benzene	SW8260C	Soil	ND	0.00088	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Cumene	SW8260C	Soil	0.004	0.0018	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0018	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00088	8/1/2022	8/3/2022
GPR1116-05	DUP-48	3	3.5	Xylenes (total)	SW8260C	Soil	0.0027	0.0035	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.24	0.13	8/1/2022	8/3/2022

Table 7 - 030A (GP R 1116)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1116-05	GPR1116-05-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.4	0.17	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.42	0.13	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.26	0.17	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Chrysene	SW8270D	Soil	0.27	0.13	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Fluorene	SW8270D	Soil	0.056	0.22	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Naphthalene	SW8270D	Soil	0.35	0.22	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Pyrene	SW8270D	Soil	0.21	0.13	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Toluene	SW8260C	Soil	0.078	0.094	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.15	0.13	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.78	0.19	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Anthracene	SW8270D	Soil	0.055	0.13	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Lead	SW6010D	Soil	67.9	2.49	8/1/2022	8/6/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.119	0.19	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.047	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.094	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.19	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Benzene	SW8260C	Soil	0.053	0.047	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Cumene	SW8260C	Soil	0.8	0.094	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.022	0.094	8/1/2022	8/3/2022
GPR1116-05	GPR1116-05-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.19	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.77	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Naphthalene	SW8270D	Soil	1.1	0.2	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Fluorene	SW8270D	Soil	0.22	0.2	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Chrysene	SW8270D	Soil	0.3	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.31	0.16	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.44	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.41	0.16	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.27	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Pyrene	SW8270D	Soil	0.55	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.67	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Lead	SW6010D	Soil	104	2.25	8/1/2022	8/6/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	1.5	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.19	0.77	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Cumene	SW8260C	Soil	18	0.77	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.38	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.15	1.5	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.77	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.38	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	1.2	1.5	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Anthracene	SW8270D	Soil	0.18	0.12	8/1/2022	8/3/2022
GPR1116-06	GPR1116-06-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	1.16	1.5	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	ND	6.6	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	ND	8.8	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	ND	6.6	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	8.8	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Chrysene	SW8270D	Soil	ND	6.6	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Fluorene	SW8270D	Soil	1.4	11	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Naphthalene	SW8270D	Soil	ND	11	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Pyrene	SW8270D	Soil	ND	6.6	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Toluene	SW8260C	Soil	0.17	0.093	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Phenanthrene	SW8270D	Soil	2.8	6.6	8/1/2022	8/8/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Lead	SW6010D	Soil	119	2.25	8/1/2022	8/6/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.18	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.087	0.093	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Cumene	SW8260C	Soil	8.4	0.093	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Benzene	SW8260C	Soil	0.037	0.046	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.12	0.18	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.093	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.046	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	2.7	0.18	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.43	0.18	8/1/2022	8/3/2022
GPR1116-07	GPR1116-07-SS01	4.5	5	Anthracene	SW8270D	Soil	ND	6.6	8/1/2022	8/8/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Anthracene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Benzo(a)anthracene	SW8270D	Soil	0.029	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Benzo(a)pyrene	SW8270D	Soil	ND	0.17	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.17	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Fluorene	SW8270D	Soil	0.024	0.21	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Naphthalene	SW8270D	Soil	ND	0.21	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Phenanthrene	SW8270D	Soil	0.062	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Pyrene	SW8270D	Soil	0.041	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Benzo(b)fluoranthene	SW8270D	Soil	0.035	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Xylenes (total)	SW8260C	Soil	1.075	0.16	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260C	Soil	0.025	0.16	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Toluene	SW8260C	Soil	6.8	0.078	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260C	Soil	0.1	0.16	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	1,2-Dichloroethane	SW8260C	Soil	ND	0.078	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Chrysene	SW8270D	Soil	0.03	0.12	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Benzene	SW8260C	Soil	28	0.19	8/1/2022	8/3/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Lead	SW6010D	Soil	85.3	12.2	8/1/2022	8/8/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Cumene	SW8260C	Soil	0.022	0.078	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Ethyl Benzene	SW8260C	Soil	0.34	0.078	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	Methyl tert-butyl ether	SW8260C	Soil	ND	0.16	8/1/2022	8/4/2022
GPR1116-08	GPR1116-08-SS01	2.5	3	1,2-Dibromoethane	SW8260C	Soil	ND	0.039	8/1/2022	8/4/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Naphthalene	SW8270D	Soil	ND	0.2	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Anthracene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	ND	0.16	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	ND	0.16	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Fluorene	SW8270D	Soil	ND	0.2	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Phenanthrene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	ND	0.002	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Chrysene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Lead	SW6010D	Soil	40.8	2.31	8/1/2022	8/6/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.002	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Pyrene	SW8270D	Soil	ND	0.12	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.001	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00051	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.002	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.00051	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Cumene	SW8260C	Soil	0.00064	0.001	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	ND	0.001	8/1/2022	8/3/2022
GPR1116-09	GPR1116-09-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Anthracene	SW8270D	Soil	0.22	0.13	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.34	0.13	8/1/2022	8/3/2022

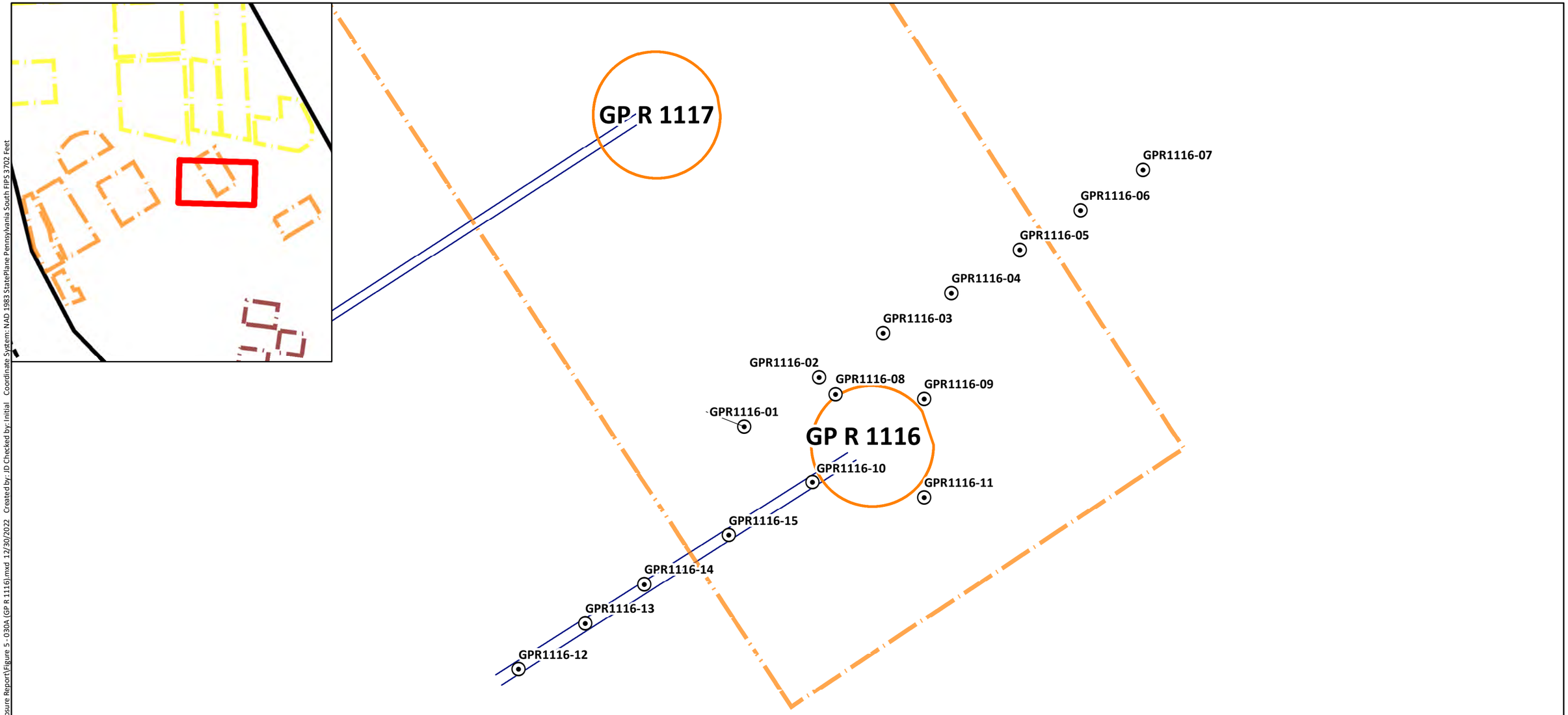
Table 7 - 030A (GP R 1116)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1116-10	GPR1116-10-SS01	3	3.5	Naphthalene	SW8270D	Soil	2.2	0.22	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Fluorene	SW8270D	Soil	0.14	0.22	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Chrysene	SW8270D	Soil	0.52	0.13	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.94	0.17	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	1.2	0.13	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	1.4	0.17	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.4	0.13	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Pyrene	SW8270D	Soil	0.38	0.13	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Lead	SW6010D	Soil	13.9	2.48	8/1/2022	8/6/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Toluene	SW8260C	Soil	0.00084	0.001	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.002	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.00022	0.001	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Cumene	SW8260C	Soil	0.00054	0.001	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Benzene	SW8260C	Soil	0.0003	0.00051	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.00025	0.002	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.001	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00051	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.00072	0.002	8/1/2022	8/3/2022
GPR1116-10	GPR1116-10-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.00156	0.002	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.13	0.12	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.17	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.18	0.12	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.092	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Chrysene	SW8270D	Soil	0.16	0.12	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Fluorene	SW8270D	Soil	0.036	0.2	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Naphthalene	SW8270D	Soil	0.16	0.2	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Pyrene	SW8270D	Soil	0.16	0.12	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Toluene	SW8260C	Soil	ND	0.083	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Phenanthrene	SW8270D	Soil	0.083	0.12	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Lead	SW6010D	Soil	193	2.3	8/1/2022	8/6/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.015	0.083	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Cumene	SW8260C	Soil	0.068	0.083	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Benzene	SW8260C	Soil	ND	0.041	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.083	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.041	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.11	0.16	8/1/2022	8/3/2022
GPR1116-11	GPR1116-11-SS01	3	3.5	Anthracene	SW8270D	Soil	0.039	0.12	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Benzo(a)anthracene	SW8270D	Soil	0.34	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Benzo(a)pyrene	SW8270D	Soil	0.62	0.15	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Benzo(b)fluoranthene	SW8270D	Soil	0.68	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270D	Soil	0.31	0.15	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Chrysene	SW8270D	Soil	0.92	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Fluorene	SW8270D	Soil	1.2	0.19	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Naphthalene	SW8270D	Soil	0.32	0.19	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Pyrene	SW8270D	Soil	0.62	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Anthracene	SW8270D	Soil	0.45	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Phenanthrene	SW8270D	Soil	1.6	0.11	8/1/2022	8/3/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Lead	SW6010D	Soil	97.5	2.15	8/1/2022	8/6/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Xylenes (total)	SW8260C	Soil	1.26	0.13	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260C	Soil	16	0.13	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	1,2-Dibromoethane	SW8260C	Soil	ND	0.033	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	1,2-Dichloroethane	SW8260C	Soil	ND	0.066	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260C	Soil	3.8	0.13	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Benzene	SW8260C	Soil	0.052	0.033	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Cumene	SW8260C	Soil	3.8	0.066	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Ethyl Benzene	SW8260C	Soil	0.12	0.066	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Methyl tert-butyl ether	SW8260C	Soil	ND	0.13	8/1/2022	8/5/2022
GPR1116-12	GPR1116-12-SS01	2.5	3	Toluene	SW8260C	Soil	0.29	0.066	8/1/2022	8/5/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Toluene	SW8260C	Soil	0.0029	0.0013	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Phenanthrene	SW8270D	Soil	1.5	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Naphthalene	SW8270D	Soil	1.3	0.21	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Fluorene	SW8270D	Soil	0.53	0.21	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Chrysene	SW8270D	Soil	0.86	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.45	0.16	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Benzo(b)fluoranthene	SW8270D	Soil	0.92	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Benzo(a)pyrene	SW8270D	Soil	0.97	0.16	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Benzo(a)anthracene	SW8270D	Soil	0.85	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Pyrene	SW8270D	Soil	1.5	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0048	0.0026	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Anthracene	SW8270D	Soil	0.48	0.12	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Lead	SW6010D	Soil	375	2.37	8/1/2022	8/6/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Xylenes (total)	SW8260C	Soil	0.0142	0.0026	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00065	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0013	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0018	0.0026	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Benzene	SW8260C	Soil	0.00064	0.00065	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Cumene	SW8260C	Soil	0.0034	0.0013	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Ethyl Benzene	SW8260C	Soil	0.0011	0.0013	8/1/2022	8/3/2022
GPR1116-13	GPR1116-13-SS01	3	3.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0026	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.0019	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Naphthalene	SW8270D	Soil	0.37	0.27	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Fluorene	SW8270D	Soil	0.74	0.27	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Chrysene	SW8270D	Soil	0.36	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270D	Soil	0.19	0.22	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Benzo(b)fluoranthene	SW8270D	Soil	0.44	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Benzo(a)pyrene	SW8270D	Soil	0.43	0.22	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Benzo(a)anthracene	SW8270D	Soil	0.42	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Pyrene	SW8270D	Soil	0.62	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Phenanthrene	SW8270D	Soil	1.5	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Lead	SW6010D	Soil	60.2	3.22	8/1/2022	8/6/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0037	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	0.00041	0.0019	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Cumene	SW8260C	Soil	0.02	0.0019	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Benzene	SW8260C	Soil	0.0012	0.00093	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0012	0.0037	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0019	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00093	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0014	0.0037	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Anthracene	SW8270D	Soil	0.18	0.16	8/1/2022	8/3/2022
GPR1116-14	GPR1116-14-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	0.0025	0.0037	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Benzo(a)anthracene	SW8270D	Soil	3.7	0.14	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Benzo(a)pyrene	SW8270D	Soil	5.2	0.18	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Benzo(b)fluoranthene	SW8270D	Soil	5.1	0.14	8/1/2022	8/3/2022

Table 7 - 030A (GP R 1116)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1116-15	GPR1116-15-SS01	1.5	2	Benzo(g,h,i)perylene	SW8270D	Soil	3.8	0.18	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Chrysene	SW8270D	Soil	3.7	0.14	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Fluorene	SW8270D	Soil	0.52	0.23	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Naphthalene	SW8270D	Soil	3.9	0.23	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Pyrene	SW8270D	Soil	4.3	0.14	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Toluene	SW8260C	Soil	0.35	0.19	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Phenanthrene	SW8270D	Soil	2.8	0.14	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Lead	SW6010D	Soil	189	2.68	8/1/2022	8/6/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Methyl tert-butyl ether	SW8260C	Soil	ND	0.39	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Ethyl Benzene	SW8260C	Soil	0.27	0.19	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Cumene	SW8260C	Soil	1.1	0.19	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Benzene	SW8260C	Soil	0.05	0.097	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	1,3,5-Trimethylbenzene	SW8260C	Soil	0.38	0.39	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	1,2-Dichloroethane	SW8260C	Soil	ND	0.19	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	1,2-Dibromoethane	SW8260C	Soil	ND	0.097	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	1,2,4-Trimethylbenzene	SW8260C	Soil	2.6	0.39	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Xylenes (total)	SW8260C	Soil	1.37	0.39	8/1/2022	8/3/2022
GPR1116-15	GPR1116-15-SS01	1.5	2	Anthracene	SW8270D	Soil	1.3	0.14	8/1/2022	8/3/2022

Notes:
SS -- Soil Sample.
DUP-48 is a field duplicate associated with sample GPR1116-05-SS01.



Legend

Tank Group

07

Associated Piping

PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 030A (GP R 1116)

Figure 5

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 5 - 030A (GP R 1116).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 030A (GP R 1116) during demolition.

Photograph 2:

View of scrap piles and the concrete pad during demolition.

Photograph 3:

View of the concrete pad following demolition.

Photograph 4:

View of the concrete pad following demolition.

Photograph 5:

View of the concrete pad and vicinity soils following demolition.

Product Movement and Waste Disposal Documentation (Tank 030A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#S12010

Load Ticket: 16330

Date: 09-29-21

Scrap

Sold to: Allegheny

Location: Tank 116-117

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 67180 lbs

Tare Weight: 40460 lbs

Net Weight: 26720 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20030558
Date: 09/29/2021 12:55 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 65938.806
Loads: 4401

DT56-1 - TRACTOR 1 TRAILER DT56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	13.35 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	67180.00	40480.00	26700.00

16330

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 005A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records ----→ Do not complete item C.2. below.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

---→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action ----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Kevin L. Long

Signature of Person Performing Site Assessment

2 / 1 / 2023
Date

Principal Consultant
Title of Person Performing Site Assessment

Terraphase Engineering, Inc.
Name of Company Performing Site Assessment

609-236-8171 x93
Telephone Number of Person Performing Site Assessment

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

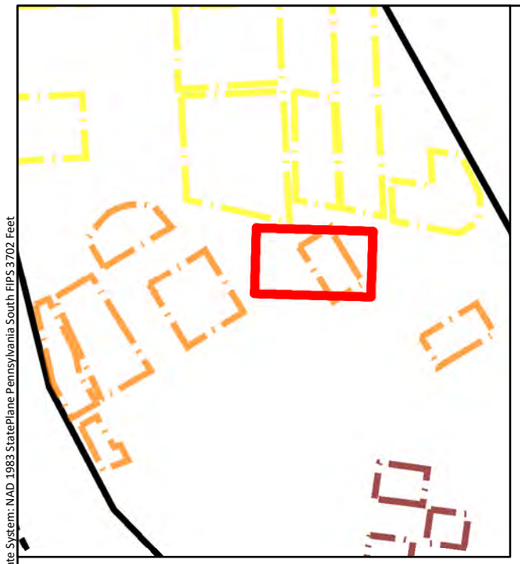
Table 1 - 005A (GP R 1117)
Sample/Analysis Information (Attachment for Section III.)

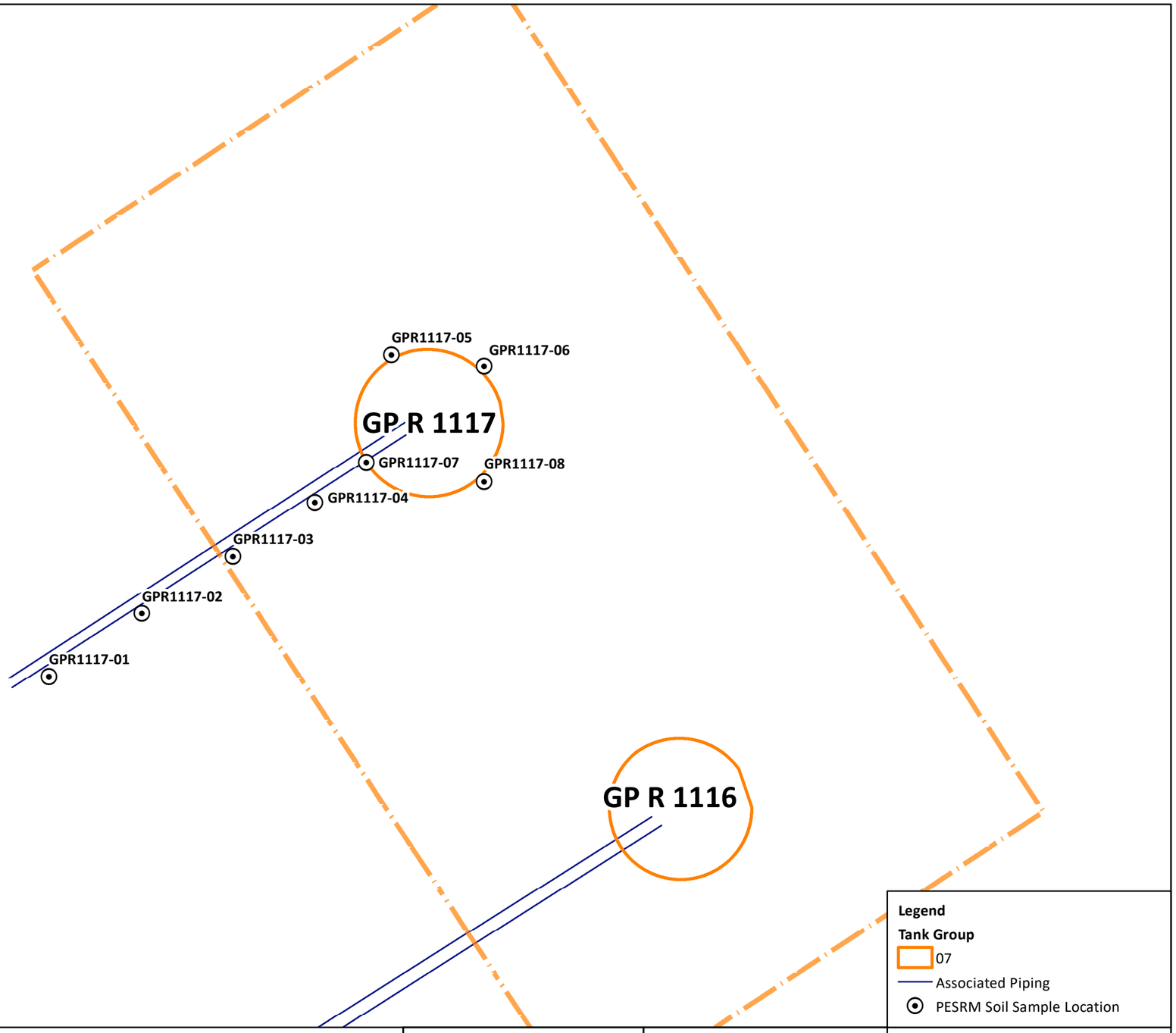
Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1117-01	GPR1117-01-SS01	4.5	5	Anthracene	SW8270D	Soil	0.22	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.72	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	1	0.22	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.97	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Chrysene	SW8270D	Soil	0.79	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.5	0.22	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Naphthalene	SW8270D	Soil	1.1	0.28	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.86	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.00315	0.0035	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Pyrene	SW8270D	Soil	1.2	0.17	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0023	0.0035	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Lead	SW6010D	Soil	157	6.55	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00087	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0016	0.0035	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Benzene	SW8260C	Soil	ND	0.00087	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Cumene	SW8260C	Soil	0.0055	0.0017	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0035	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Fluorene	SW8270D	Soil	0.26	0.28	7/18/2022	7/20/2022
GPR1117-01	GPR1117-01-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Pyrene	SW8270D	Soil	1.5	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Anthracene	SW8270D	Soil	0.29	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Benzo(a)anthracene	SW8270D	Soil	0.76	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Benzo(a)pyrene	SW8270D	Soil	1.1	0.19	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.58	0.19	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Fluorene	SW8270D	Soil	0.27	0.24	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Phenanthrene	SW8270D	Soil	0.8	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	0.00263	0.0033	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Benzo(b)fluoranthene	SW8270D	Soil	1	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Naphthalene	SW8270D	Soil	2	0.24	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0015	0.0033	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Chrysene	SW8270D	Soil	0.88	0.14	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.0017	0.0033	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Toluene	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Benzene	SW8260C	Soil	ND	0.00083	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Lead	SW6010D	Soil	125	5.59	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Cumene	SW8260C	Soil	0.001	0.0017	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	ND	0.0017	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0033	7/18/2022	7/20/2022
GPR1117-02	GPR1117-02-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00083	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Phenanthrene	SW8270D	Soil	8.9	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Benzo(a)anthracene	SW8270D	Soil	0.88	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Benzo(a)pyrene	SW8270D	Soil	0.84	0.19	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Benzo(b)fluoranthene	SW8270D	Soil	0.79	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270D	Soil	0.41	0.19	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Chrysene	SW8270D	Soil	1	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Naphthalene	SW8270D	Soil	6.3	0.24	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Pyrene	SW8270D	Soil	3.2	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0028	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Anthracene	SW8270D	Soil	1.4	0.14	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Fluorene	SW8270D	Soil	2.7	0.24	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260C	Soil	0.00085	0.0028	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Toluene	SW8260C	Soil	ND	0.0014	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0028	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Ethyl Benzene	SW8260C	Soil	ND	0.0014	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Lead	SW6010D	Soil	133	5.8	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Benzene	SW8260C	Soil	0.00024	0.00071	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Cumene	SW8260C	Soil	0.00049	0.0014	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	1,2-Dichloroethane	SW8260C	Soil	ND	0.0014	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	1,2-Dibromoethane	SW8260C	Soil	ND	0.00071	7/18/2022	7/20/2022
GPR1117-03	GPR1117-03-SS01	3.5	4	Xylenes (total)	SW8260C	Soil	0.00188	0.0028	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	2.9	0.12	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	3.1	0.16	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	3.4	0.12	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	1.6	0.16	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Chrysene	SW8270D	Soil	2.8	0.12	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Fluorene	SW8270D	Soil	1	0.2	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Phenanthrene	SW8270D	Soil	3.5	0.12	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Toluene	SW8260C	Soil	0.34	0.56	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Pyrene	SW8270D	Soil	4.8	0.12	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Naphthalene	SW8270D	Soil	2	0.2	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Lead	SW6010D	Soil	66.9	2.44	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	1.1	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	0.23	0.56	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Cumene	SW8260C	Soil	3.7	0.56	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Benzene	SW8260C	Soil	0.11	0.28	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.41	1.1	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.56	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.28	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	1.3	1.1	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	1.12	1.1	7/18/2022	7/20/2022
GPR1117-04	GPR1117-04-SS01	4.5	5	Anthracene	SW8270D	Soil	0.96	0.12	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Anthracene	SW8270D	Soil	0.54	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Benzo(a)anthracene	SW8270D	Soil	0.67	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Benzo(a)pyrene	SW8270D	Soil	0.64	0.3	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270D	Soil	0.36	0.3	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Fluorene	SW8270D	Soil	0.19	0.37	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Naphthalene	SW8270D	Soil	0.32	0.37	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Phenanthrene	SW8270D	Soil	1.2	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Pyrene	SW8270D	Soil	1.1	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Benzo(b)fluoranthene	SW8270D	Soil	0.75	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Xylenes (total)	SW8260C	Soil	ND	0.0044	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	1,2-Dibromoethane	SW8260C	Soil	ND	0.0011	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0044	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0022	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0044	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Chrysene	SW8270D	Soil	0.66	0.22	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Lead	SW6010D	Soil	619	4.42	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Cumene	SW8260C	Soil	ND	0.0022	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Ethyl Benzene	SW8260C	Soil	ND	0.0022	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0044	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Benzene	SW8260C	Soil	0.0011	0.0011	7/18/2022	7/20/2022
GPR1117-05	GPR1117-05-SS01	4	4.5	Toluene	SW8260C	Soil	ND	0.0022	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Pyrene	SW8270D	Soil	0.76	0.14	7/18/2022	7/20/2022

Table 1 - 005A (GP R 1117)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1117-06	GPR1117-06-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.72	0.19	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.76	0.14	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.49	0.19	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Chrysene	SW8270D	Soil	0.74	0.14	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Fluorene	SW8270D	Soil	0.12	0.24	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.52	0.14	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.53	0.14	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Toluene	SW8260C	Soil	0.002	0.0019	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Naphthalene	SW8270D	Soil	1.2	0.24	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00094	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Lead	SW6010D	Soil	687	2.85	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Anthracene	SW8270D	Soil	0.22	0.14	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	0.009	0.0038	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	0.0048	0.0038	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	0.0025	0.0038	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Benzene	SW8260C	Soil	0.0012	0.00094	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Cumene	SW8260C	Soil	0.0012	0.0019	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-06	GPR1117-06-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0038	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Phenanthrene	SW8270D	Soil	0.39	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Anthracene	SW8270D	Soil	0.098	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.45	0.28	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Fluorene	SW8270D	Soil	0.11	0.28	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Chrysene	SW8270D	Soil	0.27	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.2	0.22	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.36	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.3	0.22	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.26	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Pyrene	SW8270D	Soil	0.39	0.17	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0039	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00097	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Lead	SW6010D	Soil	981	3.24	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0039	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Benzene	SW8260C	Soil	0.00049	0.00097	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Cumene	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0039	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0019	7/18/2022	7/20/2022
GPR1117-07	GPR1117-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0039	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Chrysene	SW8270D	Soil	0.58	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Benzo(a)anthracene	SW8270D	Soil	0.59	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Benzo(a)pyrene	SW8270D	Soil	0.54	0.17	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270D	Soil	0.61	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270D	Soil	0.26	0.17	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Fluorene	SW8270D	Soil	0.12	0.21	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Naphthalene	SW8270D	Soil	0.14	0.21	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Anthracene	SW8270D	Soil	0.3	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Lead	SW6010D	Soil	20.4	2.46	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Phenanthrene	SW8270D	Soil	1.1	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Pyrene	SW8270D	Soil	1	0.13	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260C	Soil	ND	0.0024	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Toluene	SW8260C	Soil	ND	0.0012	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260C	Soil	ND	0.0024	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Ethyl Benzene	SW8260C	Soil	ND	0.0012	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Cumene	SW8260C	Soil	0.00028	0.0012	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Benzene	SW8260C	Soil	0.0054	0.00059	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260C	Soil	ND	0.0024	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	1,2-Dichloroethane	SW8260C	Soil	ND	0.0012	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	1,2-Dibromoethane	SW8260C	Soil	ND	0.00059	7/18/2022	7/20/2022
GPR1117-08	GPR1117-08-SS01	4.5	5	Xylenes (total)	SW8260C	Soil	ND	0.0024	7/18/2022	7/20/2022

Notes:
SS -- Soil Sample.





Legend

Tank Group

07

Associated Piping

PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 005A (GP R 1117)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 07\For AST Closure Report\Figure 1 - 005A (GP R 1117).mxd 12/30/2022 Created by: JD Checked by: Initial Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 005A (GP R 1117) during demolition.

Photograph 2:

View of Tank 005A (GP R 1117) during demolition.

Photograph 3:

View of Tank 005A (GP R 1117) during demolition.

Photograph 4:

View of the scrap pile.

Photograph 5:

View of the concrete pad and vicinity soils following demolition.

Photograph 6:

View of the concrete pad following demolition.

Product Movement and Waste Disposal Documentation (Tank 005A)

NorthStar Contracting Group, Inc.

PES Project Load Ticket

#S12010

Load Ticket: 16330

Date: 09-29-21

Scrap

Sold to: Allegheny

Location: Tank 116-117

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 67180 lbs

Tare Weight: 40460 lbs

Net Weight: 26720 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20030558
Date: 09/29/2021 12:55 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 65938.806
Loads: 4401

DT56-1 - TRACTOR 1 TRAILER DT56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	13.35 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	67180.00	40480.00	26700.00

16330

Product Movement and Waste Disposal Documentation (Tank Group 07)

Date	From Tank #	Product Qty. (gal)	Transferred To Tank #	Product
791				
10/21/2020	GP 791	0	N/A	Benzene
798				
10/21/2020	GP 798	0	N/A	Benzene
250				
10/9/2020	GP 250	7,046	PB 219	Untreated Distillate
7/7/2021	Tank 250	3,200	Tank 843	NA
8/16/2021	Tank 250/251	2,000	Tank 219	Oil/Water
251				
8/26/2020	GP 251	7,046	PB 219	Untreated Distillate
8/16/2021	Tank 250/251	2,000	Tank 219	Oil/Water
9/10/2021	Tank 251	3,000	Wash Pad	Oil/Water
9/10/2021	Tank 251	3,000	Wash Pad	NA
9/10/2021	Tank 251	3,000	Wash Pad	Water
9/10/2021	Tank 251	3,000	Wash Pad	Water/Oil
9/10/2021	Tank 251	3,000	Tank 219	Oil
494				
6/28/2021	Tank 494	2,800	843	Oil
6/28/2021	Tank 494	2,800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/28/2021	Tank 494	2800	843	Oil
6/29/2021	Tank 494	3000	219	Oil/Water
6/29/2021	Tank 137 & 494	3000	843	Water/Oil
6/29/2021	Tank 137 & 494	3000	219	Oil/Water
7/2/2021	Tank 494	3000	843	Heavy Oil
7/2/2021	Tank 494	2500	843	Recovery Oil and Water
7/2/2021	Tank 494	3000	843	Oil
7/2/2021	Tank 494	3000	Tank 843	Heavy Oil
7/2/2021	Tank 494	2500	Tank 843	Recover Oil/Water
7/2/2021	Tank 494	3000	Tank 843	Oil
7/16/2021	Tank 494	300	Tank 843	Flush
790				
10/21/2020	Tank 790	0	N/A	Benzene
792				
10/21/2020	Tank 792	0	N/A	Cumene
793				
10/21/2020	Tank 793	0	N/A	Cumene
794				
11/6/2020	Tank 794	11927.09375	TK# 796 and totes	Solvent (glycol)
799				
10/16/2020	Tank 799	305.8229167	PB 191	Benzene
767				
11/16/2020	Tank 767	1761.54	PB 191	Recovered Oil

TG07

Disposition of residual Liquid/ Tank Bottoms

Tank #	Primary Product	Reg. #	AMS #	Temp Out of Service or CIP Date	Removal Date	HSM Ship Date	Sold as Product	Remarks
GP 250	LCO	019A	P-009	10/9/2020	9/29/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 251	Distillate, Untreated	020A	P-010	8/26/2020	9/29/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 494	Main Frac Bottoms	029A	P-039	T -9/17/2021	4/14/2022	Yes	N/A	Multiple Shipping Dates Managed as HSM and shipped by Rail to WM (see Shipment #'s 11 thru 15)
GP 767	Recovered Oil	046A	P-135	T - 11/16/2020	7/8/2022	N/A	N/A	Tank had approx. 1800 gallons of product that was transferred to PB 191 and subsequently sold and shipped by barge - sludge stablized and shipped by Rail to WM (see Shipment #11)
GP 790	Benzene	034A	P-017	T-11/04/2019	2/21/2020	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 791	Benzene	006A	P-018	T-11/04/2019	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 792	Cumene	035A	P-019	T - 4/22/2020	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 793	Cumene	036A	P-020	T - 4/24/2020	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 794	Tetraethylene Glycol	037A	P-153	T - 11/6/2020	2/21/2022	N/A	Yes	Direct load to tank truck and sold to PBF - Residuals product was transferred after sale to 796 / washwater and residuals were fed to the GP WWTP to augment
GP 795	Benzene	N/A	P-021	T- 7/24/2009	2/21/2022	N/A	Yes	Flow Thru Oprocess Tank Exempt from PADEP Registration Tank
GP 796	Spent Tetraethylene Glycol	038A	P-154	T- 8/26/2021	8/26/2021	N/A	N/A	Tank was RCRA Empty - Residual material and washwater were Drained to the GP WWTP to augment dwindling food source
GP 798	Benzene	007A	P-022	T - 11/22/2019	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 799	Benzene	039A	P-023	T - 8/3/2017	2/21/2022	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP 1088	*Fresh Caustic	033A	N/A	T - 10/15/2021	7/8/2022	N/A	Yes	Consolidated with other fresh Caustic into GP 973 and Sold to PBF Wash Water was drained at the bundle pad (BOL's to be posted)
GP 1116	Udex feed	030A	P-001	T- 12/19/2019	10/4/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020
GP1117	Udex feed	005A	P-024	T- 2/6/2014	10/4/2021	N/A	N/A	Tank was empty and air gapped at turnover in June 2020

		Weight					
Container #	**Origin of Waste**	**Gross**	**Tare**	***Net***	***Facility Net***	**Rail Car #**	**Railcar Position**
5196	Tank 883	73,000	28,000	**22.50**	**22.68**	91143	F
5227	Tank 494	76,200	28,000	**24.10**	**24.49**	91143	E
5003	Tank 883	68,000	28,050	**19.98**	**20.36**	91143	D
5111	Tank 883	65,890	28,000	**18.95**	**19.14**	91143	C
5141	Tank 494	76,200	28,000	**24.10**	**24.46**	91143	B
5188	Tank 883	71,000	28,000	**21.50**	**21.46**	91143	A
5042	Tank 494	76,900	28,000	**24.45**	**24.74**	91494	F
5228	Tank 494	76,450	28,150	**24.15**	**24.37**	91494	E
5295	Tank 494	76,200	28,100	**24.05**	**24.35**	91494	D
5190	Tank 494	76,150	28,000	**24.08**	**24.30**	91494	C
5371	Tank 767	76,800	27,900	**24.45**	**24.95**	91494	B
5395	Tank 494	74,200	27,900	**23.15**	**23.50**	91494	A
5291	Tank 767	75,700	28,100	**23.80**	**24.06**	91133	A
5334	Tank 767	75,700	27,800	**23.95**	**24.24**	91133	B
5130	Tank 767	75,700	26,450	**24.63**	**23.01**	91133	C
5146	Tank 767	76,200	28,100	**24.05**	**24.06**	91133	D
5233	Tank 767	75,150	28,150	**23.50**	**23.88**	91133	E
5273	Tank 767	76,800	28,100	**24.35**	**24.32**	91133	F
5363	Tank 767	78,750	31,000	**23.88**	**23.79**	91403	A
5337	Tank 767	79,600	31,200	**24.20**	**24.32**	91403	B
5242	Tank 767	75,350	28,400	**23.48**	**23.78**	91403	C
5234	Tank 767	79,800	31,300	**24.25**	**24.47**	91403	D
5235	Tank 767	79,650	31,300	**24.18**	**24.55**	91403	E
5288	Tank 767	78,550	31,350	**23.60**	**23.76**	91403	F
5215	Tank 494	73,850	28,000	**22.93**	**25.59**	91063	A
5243	Tank 494	76,400	28,200	**24.10**	**23.39**	91063	B
5267	Tank 494	76,200	28,050	**24.08**	**24.07**	91063	C
5237	Tank 494	77,700	31,200	**23.25**	**23.33**	91063	D
5258	Tank 494	76,650	28,000	**24.33**	**22.32**	91063	E
5252	Tank 494	74,900	27,950	**23.48**	**24.08**	91063	F
				705.45	**709.82**		
		Running Total		**5,413.24**	**5,342.33**		

Over/Under
-1.5
0.1
-4.0
-5.1
0.1
-2.5
0.4
0.1
0.1
0.1
0.4
-0.9
-0.2
-0.1
0.6
0.1
-0.5
0.4
-0.1
0.2
-0.5
0.3
0.2
-0.4
-1.1
0.1
0.1
-0.8
0.3
-0.5
-15

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5346	Tank 494	**77,050**	**30,550**	**23.25**	**23.55**	91111	A	**-0.8**
5249	Tank 494	**79,500**	**30,900**	**24.30**	**24.54**	91111	B	**0.3**
5361	Tank 494	**78,400**	**30,500**	**23.95**	**23.02**	91111	C	**-0.1**
5068	Tank 494	79,000	30,950	**24.03**	**23.07**	91111	D	**0.0**
5073	Tank 494	**79,400**	**30,700**	**24.35**	**24.60**	91111	E	**0.4**
5293	Tank 494	**78,700**	**30,850**	**23.93**	**24.06**	91111	F	**-0.1**
5374	Tank 494	77,650	30,400	**23.63**	**23.76**	91069	A	**-0.4**
5056	Tank 494	78,850	30,650	**24.10**	**24.36**	91069	B	**0.1**
5166	Tank 494	78,200	30,550	**23.83**	**23.88**	91069	C	**-0.2**
5120	Tank 494	78,400	30,500	**23.95**	**24.23**	91069	D	**-0.1**
5133	Tank 494	78,750	30,650	**24.05**	**24.31**	91069	E	**0.1**
5214	Tank 494	77,650	30,600	**23.53**	**23.71**	91069	F	**-0.5**
5011	Tank 494	78,400	30,800	**23.80**	**24.02**	91431	A	**-0.2**
5064	Tank 494	78,250	30,700	**23.78**	**24.50**	91431	B	**-0.2**
5203	Tank 494	78,800	30,850	**23.98**	**24.17**	91431	C	**0.0**
5109	Tank 494	72,150	30,750	**20.70**	**21.00**	91431	D	**-3.3**
5186	Tank 494	78,600	30,800	**23.90**	**24.20**	91431	E	**-0.1**
5289	Tank 494	78,100	30,850	**23.63**	23.70	91431	F	**-0.4**
5082	Tank 494	79,300	31,050	**24.13**	**24.42**	91058	A	**0.1**
5161	Tank 494	79,700	31,100	**24.30**	**24.66**	91058	B	**0.3**
4050	Tank 494	79,600	31,200	**24.20**	**24.38**	91058	C	**0.2**
5207	Tank 494	79,850	31,200	**24.33**	**24.68**	91058	D	**0.3**
5315	Tank 494	79,700	31,050	**24.33**	**24.64**	91058	E	**0.3**
5077	Tank 494	78,800	31,150	**23.83**	**23.52**	91058	F	**-0.2**
5191	Tank 494	77,350	31,100	**23.13**	**23.32**	91475	A	**-0.9**
5369	Tank 494	79,800	31,000	**24.40**	**24.67**	91475	B	**0.4**
5236	Tank 494	79,700	31,450	**24.13**	**24.07**	91475	C	**0.1**
5155	Tank 494	79,150	30,950	**24.10**	**24.39**	91475	D	**0.1**
5292	Tank 494	79,800	31,200	**24.30**	**24.67**	91475	E	**0.3**
5180	Tank 494	79,250	31,500	**23.88**	**24.00**	91475	F	**-0.1**
5232	Tank 494	76,900	30,850	**23.03**	**23.21**	91117	A	**-1.0**
5257	Tank 494	78,850	30,800	**24.03**	**23.92**	91117	B	**0.0**
5179	Tank 494	77,250	30,900	**23.18**	**23.32**	91117	C	**-0.8**
5212	Tank 494	77,300	30,800	**23.25**	**23.44**	91117	D	**-0.8**
4134	Tank 494	80,200	31,400	**24.40**	**24.69**	91117	E	**0.4**
5147	Tank 494	78,500	30,800	**23.85**	**24.07**	91117	F	**-0.1**
				857.40	**862.75**			**-6.60**
		Running Total (tons)		**8,261.67**	**8,276.52**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5143	Tank 494	77,300	30,900	**23.20**	**23.39**	91434	A	**-0.8**
5327	Tank 494	78,150	30,650	**23.75**	**23.75**	91434	B	**-0.3**
5335	Tank 494	79,050	31,300	**23.88**	**24.04**	91434	C	**-0.1**
5348	Tank 494	77,850	30,650	**23.60**	**23.73**	91434	D	**-0.4**
5184	Tank 494	79,600	30,800	**24.40**	**24.60**	91434	E	**0.4**
5038	Tank 494	78,000	31,350	**23.33**	**23.49**	91434	F	**-0.7**
5193	Tank 494	78,450	31,050	**23.70**	**23.85**	91060	A	**-0.3**
5353	Tank 494	79,500	30,750	**24.38**	**24.64**	91060	B	**0.4**
5322	Tank 494	78,600	31,100	**23.75**	**24.15**	91060	C	**-0.3**
5165	Tank 494	79,400	30,800	**24.30**	**24.56**	91060	D	**0.3**
5284	Tank 494	79,450	30,950	**24.25**	**24.58**	91060	E	**0.3**
5356	Tank 494	76,350	31,075	**22.64**	**22.86**	91060	F	**-1.4**
5223	Tank 494	77,650	31,000	**23.33**	**23.51**	91506	A	**-0.7**
5200	Tank 494	78,350	31,000	**23.68**	**24.47**	91506	B	**-0.3**
5088	Tank 494	79,150	31,000	**24.08**	**24.34**	91506	C	**0.1**
5373	Tank 494	78,950	30,900	**24.03**	**18.20**	91506	D	**0.0**
5204	Tank 494	79,250	30,900	**24.18**	**24.33**	91506	E	**0.2**
5208	Tank 494	79,000	31,050	**23.98**	**24.25**	91506	F	**0.0**
5110	Tank 494	79,100	30,900	**24.10**	**24.49**	91085	A	**0.1**
5342	Tank 494	79,100	30,800	**24.15**	**24.46**	91085	B	**0.1**
5798	Tank 494	78,250	31,050	**23.60**	**23.35**	91085	C	**-0.4**
5360	Tank 494	77,450	31,000	**23.23**	**23.47**	91085	D	**-0.8**
5129	Tank 494	79,200	30,850	**24.18**	**24.41**	91085	E	**0.2**
5328	Tank 494	79,300	31,100	**24.10**	**24.67**	91085	F	**0.1**
5359	Tank 494	78,250	30,700	**23.78**	**23.99**	91436	A	**-0.2**
5312	Tank 494	79,150	30,600	**24.28**	**24.51**	91436	B	**0.3**
5298	Tank 494	78,150	30,850	**23.65**	**24.13**	91436	C	**-0.4**
5365	Tank 494	78,750	30,650	**24.05**	**24.45**	91436	D	**0.1**
5205	Tank 494	79,500	30,750	**24.38**	**24.60**	91436	E	**0.4**
5388	Tank 494	78,400	30,600	**23.90**	**24.11**	91436	F	**-0.1**
				715.79	**717.38**			**-2**
		Running Total		**7,404.27**	**7,413.77**			

		Weight						
Container #	**Origin of Waste**	**Gross**	**Tare**	***Net***	***Facility Net***	**Rail Car #**	**Railcar Position**	***Over/Under***
5153	Tank 494	77,300	30,700	**23.30**	**23.38**	91027	A	**-0.7**
5382	Tank 494	79,500	30,700	**24.40**	**24.57**	91027	B	**0.4**
5142	Tank 494	78,800	30,650	**24.08**	**24.34**	91027	C	**0.1**
5364	Tank 494	78,100	30,650	**23.73**	**24.03**	91027	D	**-0.3**
5384	Tank 494	79,250	30,550	**24.35**	**24.56**	91027	E	**0.4**
5394	Tank 494	77,400	30,700	**23.35**	**23.47**	91027	F	**-0.6**
5398	Tank 494	76,800	30,600	**23.10**	**23.41**	91150	A	**-0.9**
5321	Tank 494	79,400	30,600	**24.40**	**24.66**	91150	B	**0.4**
5307	Tank 494	77,950	30,850	**23.55**	**23.80**	91150	C	**-0.4**
5217	Tank 494	78,800	30,750	**24.03**	**24.29**	91150	D	**0.0**
5154	Tank 494	78,600	30,600	**24.00**	**24.29**	91150	E	**0.0**
5336	Tank 494	77,250	30,550	**23.35**	**23.66**	91150	F	**-0.6**
5358	Tank 494	78,950	30,450	**24.25**	**24.44**	91075	A	**0.3**
5148	Tank 494	77,300	30,500	**23.40**	**24.66**	91075	B	**-0.6**
5317	Tank 494	78,650	30,600	**24.03**	**24.32**	91075	C	**0.0**
5308	Tank 494	78,500	31,000	**23.75**	**23.94**	91075	D	**-0.3**
5137	Tank 494	79,100	30,500	**24.30**	**24.43**	91075	E	**0.3**
5391	Tank 494	77,850	30,500	**23.68**	**23.96**	91075	F	**-0.3**
5343	Tank 494	77,100	30,800	**23.15**	**23.24**	91074	A	**-0.9**
5150	Tank 494	79,450	30,800	**24.33**	**24.68**	91074	B	**0.3**
5304	Tank 494	77,200	30,850	**23.18**	**23.45**	91074	C	**-0.8**
5037	Tank 494	78,350	30,950	**23.70**	**23.93**	91074	D	**-0.3**
5299	Tank 494	78,700	30,950	**23.88**	**23.99**	91074	E	**-0.1**
5283	Tank 494	76,900	30,900	**23.00**	**23.15**	91074	F	**-1.0**
5113	Tank 494	76,500	30,900	**22.80**	**23.00**	91525	A	**-1.2**
5300	Tank 494	78,100	31,000	**23.55**	**23.79**	91525	B	**-0.4**
5251	Tank 494	78,700	31,500	**23.60**	**23.85**	91525	C	**-0.4**
5085	Tank 494	77,150	30,950	**23.10**	**23.26**	91525	D	**-0.9**
5202	Tank 494	78,600	31,200	**23.70**	**24.13**	91525	E	**-0.3**
5383	Tank 494	77,000	30,800	**23.10**	**23.32**	91525	F	**-0.9**
				710.10	**718.00**			**-10**
		Running Total		**6,688.49**	**6,696.39**			

		Weight					
Container #	**Origin of Waste**	**Gross**	**Tare**	***Net***	***Facility Net***	**Rail Car #**	**Railcar Position**
5246	Tank 494	78,600	31,200	**23.70**	**23.90**	91447	A
5145	Tank 494	78,400	31,100	**23.65**	**23.80**	91447	B
5144	Tank 494	77,000	31,000	**23.00**	**22.63**	91447	C
5231	Tank 494	78,000	30,750	**23.63**	**23.87**	91447	D
5400	Tank 494	78,550	31,100	**23.73**	**24.05**	91447	E
5271	Tank 494	77,000	30,700	**23.15**	**23.04**	91447	F
5352	Tank 494	82,550	35,000	**23.78**	**23.91**	91519	A
5278	Tank 494	79,450	30,750	**24.35**	**24.63**	91519	B
5282	Tank 494	77,750	31,050	**23.35**	**23.69**	91519	C
5201	Tank 494	77,850	30,850	**23.50**	**23.78**	91519	D
5349	Tank 494	79,100	30,700	**24.20**	**24.44**	91519	E
5019	Tank 494	78,500	30,700	**23.90**	**24.06**	91519	F
5075	Tank 494	77,400	31,100	**23.15**	**23.30**	91119	A
5123	Tank 494	79,300	30,950	**24.18**	**24.42**	91119	B
5170	Tank 494	78,850	31,400	**23.73**	**24.16**	91119	C
5340	Tank 494	77,500	30,900	**23.30**	**23.33**	91119	D
5020	Tank 494	77,800	31,350	**23.23**	**24.58**	91119	E
5266	Tank 494	77,300	31,200	**23.05**	**23.49**	91119	F
5240	Tank 494	79,500	31,600	**23.95**	**24.42**	91141	A
5225	Tank 494	76,950	31,200	**22.88**	**24.63**	91141	B
5206	Tank 494	77,500	31,200	**23.15**	**23.37**	91141	C
5276	Tank 494	78,700	31,350	**23.68**	**23.89**	91141	D
5272	Tank 494	79,000	31,100	**23.95**	**24.26**	91141	E
5270	Tank 494	77,350	31,350	**23.00**	**23.21**	91141	F
				565.15	**572.86**		
		Running Total		**5,978.39**	**5,915.19**		

Over/Under
-0.3
-0.4
-1.0
-0.4
-0.3
-0.9
-0.2
0.4
-0.6
-0.5
0.2
-0.1
-0.9
0.2
-0.3
-0.7
-0.8
-0.9
-0.1
-1.1
-0.9
-0.3
-0.1
-1.0
-11

		Weight					
Container #	**Origin of Waste**	**Gross**	**Tare**	***Net***	***Facility Net***	**Rail Car #**	**Railcar Position**
5196	Tank 883	73,000	28,000	**22.50**	**22.68**	91143	F
5227	Tank 494	76,200	28,000	**24.10**	**24.49**	91143	E
5003	Tank 883	68,000	28,050	**19.98**	**20.36**	91143	D
5111	Tank 883	65,890	28,000	**18.95**	**19.14**	91143	C
5141	Tank 494	76,200	28,000	**24.10**	**24.46**	91143	B
5188	Tank 883	71,000	28,000	**21.50**	**21.46**	91143	A
5042	Tank 494	76,900	28,000	**24.45**	**24.74**	91494	F
5228	Tank 494	76,450	28,150	**24.15**	**24.37**	91494	E
5295	Tank 494	76,200	28,100	**24.05**	**24.35**	91494	D
5190	Tank 494	76,150	28,000	**24.08**	**24.30**	91494	C
5371	Tank 767	76,800	27,900	**24.45**	**24.95**	91494	B
5395	Tank 494	74,200	27,900	**23.15**	**23.50**	91494	A
5291	Tank 767	75,700	28,100	**23.80**	**24.06**	91133	A
5334	Tank 767	75,700	27,800	**23.95**	**24.24**	91133	B
5130	Tank 767	75,700	26,450	**24.63**	**23.01**	91133	C
5146	Tank 767	76,200	28,100	**24.05**	**24.06**	91133	D
5233	Tank 767	75,150	28,150	**23.50**	**23.88**	91133	E
5273	Tank 767	76,800	28,100	**24.35**	**24.32**	91133	F
5363	Tank 767	78,750	31,000	**23.88**	**23.79**	91403	A
5337	Tank 767	79,600	31,200	**24.20**	**24.32**	91403	B
5242	Tank 767	75,350	28,400	**23.48**	**23.78**	91403	C
5234	Tank 767	79,800	31,300	**24.25**	**24.47**	91403	D
5235	Tank 767	79,650	31,300	**24.18**	**24.55**	91403	E
5288	Tank 767	78,550	31,350	**23.60**	**23.76**	91403	F
5215	Tank 494	73,850	28,000	**22.93**	**25.59**	91063	A
5243	Tank 494	76,400	28,200	**24.10**	**23.39**	91063	B
5267	Tank 494	76,200	28,050	**24.08**	**24.07**	91063	C
5237	Tank 494	77,700	31,200	**23.25**	**23.33**	91063	D
5258	Tank 494	76,650	28,000	**24.33**	**22.32**	91063	E
5252	Tank 494	74,900	27,950	**23.48**	**24.08**	91063	F
				705.45	**709.82**		
		Running Total		**5,413.24**	**5,342.33**		

Over/Under
-1.5
0.1
-4.0
-5.1
0.1
-2.5
0.4
0.1
0.1
0.1
0.4
-0.9
-0.2
-0.1
0.6
0.1
-0.5
0.4
-0.1
0.2
-0.5
0.3
0.2
-0.4
-1.1
0.1
0.1
-0.8
0.3
-0.5
-15

Good morning Patrick,
The following boxes on EPIX 91143 required solidification.

5188
5141
5227

Thank you for your business.

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Recycling is a good thing. Please recycle any printed emails.

"052201" 000911143A

7/6/19-19

Bill of Lading (Page 1 of 2)

DOCUMENT # 91143A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 4114	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	21.5	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225188			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dunbody	Date: 7-5-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-5-21	

Gross 73400
Tare 30480
Net 42920

Tons 21.46

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stabs Weight ticket

RECEIVING TICKET # 701949

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91143B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.1	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225141			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per:	Date: 7-5-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Gray	Date: 8.5.21	

EPIU 228141

Gross 79740
Tare 30820
Net 48920

24.46

CHEMICAL WASTE MANAGEMENT, INC
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761966

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

7/6/1920

DOCUMENT # 91143C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Tracted 4/9/22	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	18.95	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225111			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Dentley	Date: 8-4-21

7619D0

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-4-21	

653155

EPIC 5111

TICKET 36

ID 653155
GROSS 73240 lb INBOUND
10:37AM 08/04/2021
OUTBOUND TICKET 36

GROSS 73240 lb RECALLED
TARE 34960 lb
NET 38280 lb

NET 19.14 TON

03:44PM 08/04/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761920

WEIGHED BY _____

7/19/21

Bill of Lading (Page 1 of 2)

DOCUMENT # 91143D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 47123	

BAH 32008

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	19.98	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225003			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Devik	Date: 8/4/2021

7/19/21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8/4/2021	

653501

~~5003~~ EPIU

TICKET 37

ID 653501
GROSS 71180 lbINBOUND
10:38AM 08/04/2021

22
5003
PD

Tare 30460
Net 40720

Tare
~~GROSS~~ 30460 lb
04:00PM 08/04/2021

net 40720

20.36

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761921

WEIGHED BY _____

000091143E

Bill of Lading (Page 1 of 2)

DOCUMENT # 91143E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 NH	
Tilled 4/1/24	

H132

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.1	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225227			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Karl Dinkmann	Date: 8-5-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Edgardo Velazquez	Date: 6/5/21	

EPA 225221

Gross $36220
Tare 34640
Net 18980

24.49

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stat weight ticket

RECEIVING TICKET # 761972

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91143F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA	CM	22.5	T
		IM CONTAINER# EPIU225196			
		RAIL CAR# EPIX91143			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Lambert Date: 8-5-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91143F

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: [signature]	Date: 8/5/21	

EPA 223176

Gross 79180
Tare 33830
Net 45360

22.68 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761952

WEIGHED BY _____

Good morning,
The following boxes on 91133 required solidification.

5291
5146

Thanks,

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

761996

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-2A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 497136	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	23.8	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225291			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Date: 7-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-6-21	

CP1422324

TICKET 54

ID 653153
GROSS 82520 lb INBOUND
11:55AM 08/06/2021

OUTBOUND TICKET 54

GROSS 82520 lb RECALLED
TARE 34400 lb
NET 48120 lb

NET 24.06 TON

03:46PM 08/06/2021

Gross 82520
Tare 34400
Net 48120
24.06 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761996

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91133-2B

7/2/2000

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 91135

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.95	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225334			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Lambert	Date: 8-6-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-6-21	

653501

EPIU 22

TICKET 65334

ID 653501
GROSS 79160 lbINBOUND
12:39PM 08/06/2021
OUTBOUND TICKET 61

GROSS 79160 lb RECALLED
TARE 30680 lb
NET 48480 lb

NET 24.24 TON

04:34PM 08/06/2021

Gross 79160
Tare 30680
Net 48480

24.24 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702300

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

761985

DOCUMENT # 91133-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 47138	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.63	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225130			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dembodeaux Date: 8-6-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2168

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Carey	Date: 8-6-21	

Tare

Gross 76540
Tare 30520
Net 46020

23.01 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761985

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

)61986

DOCUMENT # 91133-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 49139	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.05	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225146			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardson Date: 8-6-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: [signature]	Date: 8/6/21	

EPIC 00
5146

TICKET 24

ID 653375
GROSS 82300 lbINBOUND
09:06AM 08/06/2021

Tare
TARE 34180 lb
10:03AM 08/09/2021

net 48120

Gross 82300
Tare 34180
Net 48120

24.06 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 761980

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

7/6/2012

DOCUMENT # 91133-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 D98
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 47140	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.50	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225233			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubadeaux	Date: 8-9-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-9-21	

ER14 22
S233

Gross 82020
Tare 34260
Net 47760
Net 23.88 Ton

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762012

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

7/6/2021

DOCUMENT # 91133-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 97141	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225273			
		RAIL CAR# EPIX91133-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Quill	Date: 08-09-21

7/6/2011

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91133-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-9-21	

EPI4 22 5273

Gross 79480
Tare 30890
Net 48690
Tons 24.32

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stub ticket

RECEIVING TICKET # 762011

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Wednesday, August 11, 2021 9:29 AM
To: Patrick Dauria; Rhyne, John
Subject: BOLs & weight ticket for EPIX 91063-2
Attachments: 91063-2.pdf

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Good morning!
I am happy to announce none of the 6 boxes went to solidification.
All will be billed at $382/ton.

See you tomorrow 😊

5215 ✓
5243 ✓
5267 ✓
5237 ✓
5259 ✓
5252 ✓

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Recycling is a good thing. Please recycle any printed emails.

762051

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	22.93	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225215			
		RAIL CAR# EPIX91063-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and condations in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49 Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville Date: 8-10-21

Bill of Lading (Continuation Sheet) 2 of 2

762051

DOCUMENT# 91063-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-10-21	

EPA 025213

TICKET ID

ID 653153
GROSS 81580 lb INBOUND
08:55AM 08/10/2021

Tare
30400 lb
08:17AM 08/10/2021

Net 51180

Gross 81580
Tare 30400
Net 51180

25.59 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760251

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762062

DOCUMENT # 91063-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 47199

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.1	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225243			
		RAIL CAR# EPIX91063-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubadleux Date:

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91063-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	8-10-21

EPA 22 3270

Gross 77480
Tare 30700
Net 46780

2339 Ton

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stub ticket

RECEIVING TICKET # 762062

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762040

DOCUMENT # 91063-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket #1150	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.08	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225267			
		RAIL CAR# EPIX91063-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dunbody	Date: 8-9-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91063-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	

EPA 225267

Gross 82140
Tare 34000
Net 48140
Ton 24.07

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stacy Tidwell

RECEIVING TICKET # 768040

WEIGHED BY _____

7C2038

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Tidal 4MS1	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.25	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225237			
		RAIL CAR# EPIX91063-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Lombardy	Date: 8-9-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91063-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Gary	Date: 8-9-21	

BP 64122
[illegible] 523'

Gross 77580
Tare 30840
Net 46660

23.33 Ton

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762038

WEIGHED BY _____

72059

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 41152	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225758 10			
		RAIL CAR# EPIX91063-2 0			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/ADeville	Date: 8-10-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91063-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-10-21	

TICKET 43

ID 5056 653501
GROSS 79660 lb INBOUND
12:19PM 08/10/2021

OUTBOUND TICKET 43

GROSS 79660 lb RECALLED
TARE 35020 lb
NET 44640 lb

NET 22.32 TON

04:02PM 08/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76058

WEIGHED BY _____

762047

Bill of Lading (Page 1 of 2)

DOCUMENT # 91063-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 99153

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.48	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225252 28			
		RAIL CAR# EPIX91063-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 b Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/CDeville	Date: 8-10-21

762047

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91063-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Cearley	Date: 8-10-21	

EPA 225082

Gross 82200
Tare 34040
Net 48160
Tons 24.08

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

Stub ticket

RECEIVING TICKET # 762047

WEIGHED BY _____

Patrick Dauria

From: Doan, Janet <JDoan@wm.com>
Sent: Friday, August 13, 2021 9:06 AM
To: Patrick Dauria; Rhyne, John
Subject: EPIX 91403-2
Attachments: 91403-2.pdf

Good morning,
Patrick – great to finally meet you!
John – good to see you again, been WAY too long!

I hope The Big Easy was kind to you guys last night 😊

BOLs and weight tickets attached for 91403-2.
All six boxes invoiced at solid rate of $382/ton.

5363 ✓
5337 ✓
5242 ✓
5239 ✓
5235 ✓
5288 ✓

Have a Wonderful Weekend.

JANET DOAN
Scheduling Coordinator
Gulf Coast Area
GulfCoastScheduling@wm.com
jdoan@wm.com

Main: 337.583.3700
Direct: 337.583.3745
7170 John Brannon Road
Sulphur, LA 70665

Recycling is a good thing. Please recycle any printed emails.

Bill of Lading (Page 1 of 2)

762084

DOCUMENT # 91403-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tickets 49142

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.88	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225363			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp.		
Per:	[signature]	Date: 7/15/21	Per: Luis Castro		Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dembodeaux Date: 8-11-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-11-21	

EPIU 225363

Gross 77900
Tare 30320
Net 47580
Tons 23.79

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 762084

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762095

DOCUMENT # 91403-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2168

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 47143

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	24.2	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225337			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date:	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chatoodeaux Date: 7-12-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-12-21	

EPA 935331

TICKET 17

ID 653501
GROSS 79640 lbINBOUND
03:50AM 08/12/2021

OUTBOUND TICKET 17

GROSS 79640 lb RECALLED
TARE 31000 lb
NET 48640 lb

NET 24.32 TON

02:36PM 08/12/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762085

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760272

DOCUMENT # 91403-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 491461	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.48	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225242			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp.		
Per:	[signature]	Date: 7/15/21	Per: Luis Castro		Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Gerrie Dubodeaux	Date: 8-11-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-11-21	

EP1422242

TICKET 15

ID 653153
GROSS 82860 lbINBOUND
08:33AM 08/11/2021

Tare
~~GROSS~~ 35300 lb
03:07PM 08/11/2021

Gross 82860
Tare 35300
Net 47560

47560

23.78 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762072

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76205

DOCUMENT # 91403-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tickets 47145

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.25	T
		PROFILE: 9 43LA			
		IM CONTAINER# EPIU225239			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deinlo/aQuille Date: 8-11-21

760075

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2D

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-11-21	

EPA-22257

TICKET 17 AD

ID 653501
GROSS 79820 lbINBOUND
08:52AM 08/11/2021

OUTBOUND TICKET 17

GROSS 79820 lb RECALLED
TARE 30880 lb
NET 48940 lb

NET 24.47 TON

02:57PM 08/11/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762075

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76209)

DOCUMENT # 91403-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 411446

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.18	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225235			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

N4

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbadaux Date: 8-12-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derek Crary	Date: 8-12-21	

8/12/2021

TICKET 24

ID 653153
GROSS 83860 LB INBOUND
09:14AM 08/12/2021

OUTBOUND TICKET 24

GROSS 83860 lb RECALLED
TARE 34760 lb
NET 49100 lb

NET 24.55 TON

11:24AM 08/12/2021

Gross 83860
Tare 34760
Net 49100

24.55 Tons

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 260977

WEIGHED BY _____

76208

Bill of Lading (Page 1 of 2)

DOCUMENT # 91403-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 47147

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.6	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225288			
		RAIL CAR# EPIX91403-2			
		ERG# 171 H039			

MH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville	Date: 8-11-21

76208

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91403-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-11-21	

EPIU 225288

Gross 83980
Tare 35860
Net 47520
Tons 23.76

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70663

RECEIVING TICKET # 762087

WEIGHED BY _____

7/22/22

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241 Ticket 411130	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225395			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Ernie Rubodeaux	Date: 8-25-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 8/25/2021	

TICKET 17

ID 652692
GROSS 79260 LB INBOUND
OUTBOUND@CK[08/25/2021

GROSS 79260 LB RECEIVED
TARE 32260 LB
NET 47000 LB

NET 23.50 TON
12:58PM 08/25/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76242

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762455

DOCUMENT # 91494B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 47131

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.45	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225371			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp.		
Per:		Date: 7/15/21	Per: Luis Castro		Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 8-26-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Comulla	Date: 8/25/2021	

EPA 02.532

TICKET 8

ID 654575
GROSS 83980 lb INBOUND
07:20AM 08/26/2021

OUTBOUND TICKET 8

GROSS 83980 lb RECALLED
TARE 41080 lb
NET 42900 lb

NET 24.95 TON

08:34AM 08/26/2021

CP

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760455

WEIGHED BY _____

4-415

Bill of Lading (Page 1 of 2)

762377

DOCUMENT # 91494C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2189	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 49132	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.08	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225190			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubuclet	Date: 8-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: [signature]	Date: 8/24/2021	

EPA 02 Spa

TICKET ID

ID 452592
GROSS 81200 LbINBOUND
09:02AM 08/24/2021

OUTBOUND TICKET ID

GROSS 81200 lb RECALLED
TARE 32580 lb
NET 48620 lb
NET 24.31 TON

11:53AM 08/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762377

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762376

DOCUMENT # 91494D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 471133	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.05	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225295			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Chubodeaux	Date: 8-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Lacy	Date: 8-24-21	

EPA 0559

TICKET 17

ID 653376
GROSS 03160 lb INBOUND
08:57AM 08/24/2021

OUTBOUND TICKET 17

GROSS 03160 lb RECALLED
TARE 34460 lb
NET 48700 lb

NET 24.36 TON

10:56AM 08/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760376

WEIGHED BY _____

760406

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 41134

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225228			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Date: 8-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Cannella	Date: 8/24/2021	

EPI4222226

TICKET 62

ID 652592.
GROSS 81280 lbINBOUND
02:14PM 08/24/2021

OUTBOUND TICKET 62

GROSS 81280 lb RECALLED
TARE 32540 lb
NET 48740 lb

NET 24.37 TON

04:19PM 08/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762404

WEIGHED BY _____

4415

Bill of Lading (Page 1 of 2)

762397

DOCUMENT # 91494F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 41735	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.45	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225042			
		RAIL CAR# EPIX91494			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp.	
Per:	Date: 7/15/21	Per: Luis Castro	Date: 7/16/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49 Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbodeaux Date: 8-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Derrick Cox	Date: 8-24-21

EPI422304

TICKET 53

ID 653375
GROSS 83740 lbINBOUND
01:11PM 08/24/2021

OUTBOUND TICKET 53

GROSS 83740 lb RECALLED
TARE 34260 lb
NET 49480 lb

NET 24.74 TON

02:39PM 08/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 162397

WEIGHED BY _____

4415

762467

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.95	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225240			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/20

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cruthoody Date: 8-26-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-26-21	

EPA422524

TICKET 33

ID 653504
GROSS 79920 lbINBOUND
10:46AM 08/26/2021

OUTBOUND TICKET 33

GROSS 79920 lb RECALLED
TARE 31080 lb
NET 48840 lb

NET 24.42 TON

01:01PM 08/26/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762467

WEIGHED BY _____

4.415

Bill of Lading (Page 1 of 2)

624469

DOCUMENT # 91141-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 47778

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	22.88	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225225			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cambody Date: 8-26-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-26-21	

EPI4223

TICKET 34 225

ID 653375
GROSS 83240 lbINBOUND
10:53AM 08/26/2021

OUTBOUND TICKET 34

GROSS 83240 lb RECALLED
TARE 33980 lb
NET 49260 lb

NET 24.63 TON

01:47PM 08/26/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7624169

WEIGHED BY _____

+415

Bill of Lading (Page 1 of 2)

762159

DOCUMENT # 91141-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 47779

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225206			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NKP

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rembodeaux Date: 8-26-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Joseph	Date: 8/26-2021	

EPA1223206

TICKET 22

ID 652592
GROSS 79140 lbINBOUND
09:13AM 08/26/2021

OUTBOUND TICKET 22

GROSS 79140 lb RECALLED
TARE 32400 lb
NET 46740 lb

NET 23.37 TON

10:55AM 08/26/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762459

WEIGHED BY _____

+115

Bill of Lading (Page 1 of 2)

76479

DOCUMENT # 91141-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tabs 4MP0

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.68	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225276			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville /ADeville Date: 8-26-21

Bill of Lading {Continuation Sheet) 2 of 2

76279

DOCUMENT# 91141-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courvelle	Date: 8/26/2021	

EPIY 225276

TICKET 54
OUTBOUND TICKET 54
ID 652592
GROSS 80[illegible] INBOUND
TARE 03[illegible]lb 08/26/2021
NET 47780 lb

NET 23.89 TON
03:45PM 08/26/2021

GROSS 32320 lb
03:46PM 08/26/2021

net 17760

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76278

WEIGHED BY _____

9/1/15

Bill of Lading (Page 1 of 2)

762505

DOCUMENT # 91141-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tanks 4/7/21

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.95	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225272			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rembodeaux Date: 8-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91141-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Gar	Date: 8-27-21	

EPA 22502

TICKET 23

ID 653375
GROSS 82460 lb INBOUND
08:49AM 08/27/2021

OUTBOUND TICKET 23

GROSS 82460 lb RECALLED
TARE 33940 lb
NET 48520 lb

NET 24.26 TON

10:29AM 08/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76505

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91141-2F

702484

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 47782

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.00	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225270			
		RAIL CAR# EPIX91141			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Chatelain	Date: 8-27-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91141-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-26-21	

EPA225270

TICKET 3

ID 653504
GROSS 77360 lbINBOUND
07:08AM 08/27/2021

OUTBOUND TICKET 3

GROSS 77360 lb RECALLED
TARE 30940 lb
NET 46420 lb

NET 23.21 TON

08:21AM 08/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762484

WEIGHED BY _____

762358

Bill of Lading (Page 1 of 2)

DOCUMENT # 91519-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 47762

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.78	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225352			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NM

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 7/23/21	Per: Luis Castro		Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc		Certification of receipt of materials	
Per:	[signature]	Date:	8-23-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91519-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 8-23-21	

EPA122532

TICKET 37

ID 653375
GROSS 82100 lbINBOUND
12:04PM 08/23/2021

OUTBOUND TICKET 37

GROSS 82100 lb RECALLED
TARE 34280 lb
NET 47820 lb

NET 23.91 TON

02:22PM 08/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762358

WEIGHED BY _____

X415

762365

Bill of Lading (Page 1 of 2)

DOCUMENT # 91519-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 47763

SHIPPER'S INSTRUCTIONS

H039 VBT

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225278			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Karl Parkman	Date: 8-25-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91519-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 8/23/2021	

652592

EPHI-2-18

TICKET 51

ID 652592
GROSS 81360 lbINBOUND
01:35PM 08/23/2021
OUTBOUND TICKET 51

GROSS 81360 lb RECALLED
TARE 32100 lb
NET 49260 lb

NET 24.63 TON

03:28PM 08/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762365

WEIGHED BY _____

4117

WASHWATER

Bill of Lading (Page 1 of 2)

DOCUMENT # 91519-2C 762336

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tribo 4M64

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225282			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rubadeaux Date: 8-20-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91519-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 8/20/2021	

EPIU232282

TICKET 60

ID 652592
GROSS 79860 lb INBOUND
01:39PM 08/20/2021

OUTBOUND TICKET 60

GROSS 79860 lb RECALLED
TARE 32480 lb
NET 47380 lb

NET 23.69 TON

04:11PM 08/20/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

6

RECEIVING TICKET # 60336

WEIGHED BY _____

4/15

Bill of Lading (Page 1 of 2)

DOCUMENT # 91519-2D 762313

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Toledo Refinery

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.50	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225201			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials/ Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbodeaux Date: 8-20-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91519-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Connelly	Date: 8/20/2021	

TICKET 19

ID 602592
GROSS 80100 Lb INBOUND
08:56AM 08/20/2021

OUTBOUND TICKET 19

GROSS 80100 Lb RECALLED
TARE 52540 Lb
NET 27560 Lb

NET 23.78 TON

10:26AM 08/20/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760313

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762414

DOCUMENT # 91519-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 47466

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	24.20	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225349			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cumbaa Date: 8-23-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91519-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 8/23/2021	

TICKET 14

ID 652592
GROSS 81000 lb OUTBOUND
08:47AM 08/23/2021

OUTBOUND TICKET 14

GROSS 81000 lb RECALLED
TARE 32120 lb
NET 48880 lb

NET 24.44 TON

10:23AM 08/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703499

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76275

DOCUMENT # 91519-21

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.90	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225019			
		RAIL CAR# EPIX91519			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 7/23/21	Per: Luis Castro		Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardeaux Date: 8-20-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91519-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Cody Smith	Date: 8-20-21	

EPA003019
TICKET 22

ID 653209
GROSS 83040 lbINBOUND
09:17AM 09/20/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

762268

Bill of Lading (Page 1 of 2)

DOCUMENT # 91119A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 499169

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225075			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NR

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chabaleau Date: 8-19-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91119A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Carly Smith	Date: 8-19-21	

TICKET 21

ID 65350L
GROSS 77340 OUTBOUND
08:08AM 08/19/2021

OUTBOUND TICKET 21

GROSS 77340 lb RECEIVED
TARE 30900 lb
NET 46440 lb

NET 23.30 TON

10:57AM 08/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762208

WEIGHED BY _____

ı of Lading (Page 1 of 2)

762299

DOCUMENT # 91119B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Trbet 4MMO

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225123			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 7/23/21	Per: Luis Castro		Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda DeVille	Date: 07-28-21

Bill of Lading (Continuation Sheet) 2 of 2

762299

DOCUMENT# 91119B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Cody Smith	Date: 08-19-21	

EPIC122123

TICKET 68

ID 653501
GROSS 79380 lb INBOUND
01:52PM 08/19/2021

OUTBOUND TICKET 68
GROSS 79380 lb RECALLED
TARE 30540 lb
NET 48840 lb
NET 24.42 TON
1 PM 08/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760288

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762267

DOCUMENT # 91119C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 4MM1

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.73	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225170			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NR

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management Inc	Certification of receipt of materials
Per: Amanda Neville/ANeville	Date: 8-19-21

Bill of Lading {Continuation Sheet) 2 of 2

76220

DOCUMENT# 91119C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/Stale/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/Stale/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: joseph courville	Date: 8/19/2014	

GROSS 80460 LB INBOUND
08:55AM 08/19/2021

OUTBOUND TICKET 20

GROSS 80460 LB RECALLED
TARE 32140 LB
NET 48320 LB

NET 24.16 TON

10:40AM 08/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76210

WEIGHED BY _____

760253

Bill of Lading (Page 1 of 2)

DOCUMENT # 91119D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket #7112

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.30	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225340			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 0, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devilbiss Date: 8-18-21

760253

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91119D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Cody Csmith	Date: 08-18-21	

TICKET 62

ID 653501
GROSS 77560 lbINBOUND
01:33PM 08/18/2021

OUTBOUND TICKET 62

GROSS 77560 lb RECALLED
TARE 30900 lb
NET 46660 lb

NET 23.33 TON

03:27PM 08/18/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760253

WEIGHED BY _____

7602300

Bill of Lading (Page 1 of 2)

DOCUMENT # 91119E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 4/7/23

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.23	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225020			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NKE

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devilbiss Date: 8-19-21

Bill of Lading {Continuation Sheet) 2 of 2

762500

DOCUMENT# 91119E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Joseph Counsellor	Date: 8/19/2021	

EPI422020

TICKET 69 AB

ID 652592
GROSS 81800 lbINBOUND
01:58PM 08/19/2021

OUTBOUND TICKET 69

GROSS 81800 lb RECALLED
TARE 32640 lb
NET 49160 lb

NET 24.58 TON

03:43PM 08/19/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760300

WEIGHED BY _____

4115

762232

Bill of Lading (Page 1 of 2)

DOCUMENT # 91119F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 47774

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID. N.O.S. 9.III (BENZENE)	CM	23.05	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225266			
		RAIL CAR# EPIX91119			
		ERG# 171 H039			

NH.

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Us usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubodeaux	Date: 8-12-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91119F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Cervantes	Date: 8/18/2021	

(P) 11623 - 3060

TICKET 60

ID 652522
GROSS 72380 lbNORMND
02:15PM 08/10/2021

GROSS 32460 lb
03:59PM 08/18/2021

(P)

Alt 21698

23.49

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762252

WEIGHED BY _____

ATTS

7/22/14

Bill of Lading (Page 1 of 2)

DOCUMENT # 91447-2A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 47650	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.70	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225246			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management Inc	Certification of receipt of materials
Per: Amanda Deville	Date: 8-17-21

Bill of Lading {Continuation Sheet) 2 of 2

760214

DOCUMENT# 91447-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Joseph Courville	Date: 8/17/2021	

652592

TICKET 56

ID 652592
GROSS 80780 lb INBOUND
01:00PM 03/17/2021
OUTBOUND TICKET 56

GROSS 80780 lb RECALLED
TARE 32980 lb
NET 47800 lb

NET 23.90 TON

02:52PM 03/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76214

WEIGHED BY _____

762229

Bill of Lading (Page 1 of 2)

DOCUMENT # 91447-2B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 491651	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.65	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225145			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

NA

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date:	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dembodeaux	Date: 8-18-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91447-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Cody Smith	Date: 08-18-21	

EPA 220173

Gross 78440
Tare 30840
Net 47600
23.80

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762226

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91447-2C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 4M652	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.00	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225144			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/ADeville	Date: 8-16-21

762185

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91447-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	8-16-21

EPA 23199

TICKET 72

TD 65301
GROSS 76620 lbINBOUND
02:01PM 08/16/2021

KD

31360 lb
02:30PM 08/17/2021

Ref-L15200

22.63

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76018

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762186

DOCUMENT # 91447-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
11Chs 4M653

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.63	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225231			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardeaux Date: 7-26-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91447-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per: Joseph Cruz	Date: 8-16-2021

EPA D2 5231

TICKET 73

ID 652592
GROSS 80420 lbINBOUND
02:02PM 08/16/2021

KD

Tare

GROSS 32680 lb KD

09:23AM 08/17/2021

~~47740~~

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

Net 47740

23.87

RECEIVING TICKET # 762186

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91447-2E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 47654	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.73	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225400			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Camie Dubodleux Date: 8-18-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91447-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph [illegible]	Date: 8/18/2021	

EPIL 22 5400

Gross 80360
Tare 32260
Net 48100
24.05

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762228

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76213

DOCUMENT # 91447-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 49655	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225271			
		RAIL CAR# EPIX91447			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 7/23/21	Per: Luis Castro	Date: 7/26/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Davila/QAuditor	Date: 8-17-21

Bill of Lading {Continuation Sheet) 2 of 2

762213

DOCUMENT# 91447-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Cathy Cmith	Date: 6-19-21	

TICKET 53

ID 663501
GROSS 77140 LB INBOUND
12:35PM 08/17/2021

OUTBOUND TICKET 53

GROSS 77140 LB RECALLED
TARE 31060 LB
NET 46080 LB

NET 23.04 TON

02:33PM 08/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76015

WEIGHED BY _____

762584

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-2A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Trlr# 48243	

NH

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.3	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225153			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Karl Dahaman	Date: 8-31-21

762584

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: LaShun Bellard	Date: 8-31-21	

TICKET 40

ID 653204
GROSS 82400 lb INBOUND
OUTBOUND 01/31/2021
12:37PM
GROSS 82400 lb RECEIVED
TARE 35640 lb
NET 46760 lb

NET 23.38 TON

02:20PM 01/31/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 705584

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76262/

DOCUMENT # 91027-2B

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone. (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/at 1241
Ticket 48244

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.4	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225382			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dumbleaux	Date: 9-2-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joshua Bellard	Date: 9-1-21	

TICKET # 653204

ID 653204
GROSS 84540 lb INBOUND
07:28AM 09/02/2021

OUTBOUND TICKET 0

GROSS 84540 lb RECEIVED
TARE 35400 lb
NET 49140 lb

NET 24.57 TON

09:00AM 09/02/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 7(2)2021

WEIGHED BY _____

762588

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48245

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.08	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225142			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Camie Dubodeaux Date: 8-9-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Derrick Gary	Date: 8-31-21	

1PW02-5140

Tk 655675
GROSS 65100 lb INBOUND
07:36AM 09/01/2021

OUTBOUND TICKET 6

GROSS 65100 lb to GALLED
TARE 54620 lb
NET 10480 lb
NET 24.56 TON

08:27AM 09/01/2021

CP

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

CP

RECEIVING TICKET # 1(03)528

WEIGHED BY _____

8.5/8

Bill of Lading (Page 1 of 2)

122606

DOCUMENT # 91027-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 49216	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.73	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225364			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: **CSX Transportation**	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Cowhody	Date: 9-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Gary	Date: 9.1.21	

CPI 4032564

TICKET 34

ID 653375
GROSS 82340 lb INBOUND
11:28AM 09/01/2021

OUTBOUND TICKET 34

GROSS 82340 lb RECALLED
TARE 34280 lb
NET 48060 lb

NET 24.03 TON

02:15PM 09/01/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702606

WEIGHED BY _____

762200

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tidus 4 Bill

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.35	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225384			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazarddus Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordeaux Date: 9-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Lathan Ballard	Date: 9-1-21	

TICKET 25

ID 653204
GROSS 84780 lbINBOUND
10:22AM 09/01/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 740800

WEIGHED BY _____

762623

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2189	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225394			
		RAIL CAR# EPIX91027-2			
		ERG# 171 H038			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodleaux Date: 9-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Cain	Date: 9/1/2021	

TICKET 29

ID 652592
GROSS 79420 lb INBOUND
10:46AM 09/01/2021

OUTBOUND TICKET 29

GROSS [illegible] lb RECEIVED
TARE [illegible]
NET [illegible]

21.09 TON

[illegible] 09/01/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 29(0)(0)

WEIGHED BY _____

762522

Bill of Lading (Page 1 of 2)

DOCUMENT # 91150-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Truck 48249

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.1	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225398			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H039			

Net

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of Hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardeau Date: 8-31-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Ware	Date: 8-31-21	

DPH0333510

TICKET 26

ID 653375
GROSS 81300 LB INBOUND
10:30AM 08/31/2021

OUTBOUND TICKET 26

GROSS 81300 lb RECALLED
TARE 34980 lb
NET 46420 lb

NET 23.21 TON

12:59PM 08/31/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760272

WEIGHED BY _____

762585

Bill of Lading (Page 1 of 2)

DOCUMENT # 91150-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
T Wed 48250

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

SHIPPER'S INSTRUCTIONS

NH

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.4	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225321			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per:	Date:

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	Date:	
Per:		
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt	Date:	8/31/2021
Per: Joseph		

8/31/2021

TICKET 43

ID 652422
GROSS 81820 161800LBS
12:49PM 08/31/2021

GROSS 52500 lb
12:52PM 08/31/2021

60
41900
24.66

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762585

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762526

DOCUMENT # 91150-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

T dbb 48251

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9.III (BENZENE)	CM	23.55	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225307			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rembaugh Date: 8-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per: Gary Smith	Date: 8-27-21	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per:	Date:	

CPI 4.25587

TICKET 40

ID 653604
GROSS 78260 LBINBOUND
11:15AM 08/27/2021

OUTBOUND TICKET 40

GROSS 78260 lb RECEIVED
TARE 30660 lb
NET 47600 lb

NET 23.80 TON

01:57PM 08/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762526

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76252

DOCUMENT # 91150-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 048791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 48252	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	24.03	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225217			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per: [signature]	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Rhodes	Date: 8-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Joseph Cox Sr	Date: 8/27/2021	

EPA 02-2017

TICKET 31

ID 652592
GROSS 81300 lb INBOUND
09:50AM 08/27/2021

OUTBOUND TICKET 31

GROSS 81300 lb RECALLED
TARE 32720 lb
NET 40580 lb

NET 24.29 TON

11:29AM 08/27/2021

CD

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762512

WEIGHED BY _____

9/1/15

No Scale Ticket

Bill of Lading (Page 1 of 2)

762534

DOCUMENT # 91150-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUOED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 48253

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225154			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H038			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Rumbaugh	Date: 8-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Coulter	Date: 8/27/2021	

EPH5552154

TICKET 50

ID 652592
GROSS 80920 lbINBOUND
01:50PM 08/27/2021

GROSS 32440 lb
01:22PM 08/27/2021

CPnet 48150
24.29

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762534

WEIGHED BY _____

762530

Bill of Lading (Page 1 of 2)

DOCUMENT # 91150-2F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 48254	NH

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.35	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225336			
		RAIL CAR# EPIX91150-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Ken Parsons	Date: 8-2-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91150-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 048791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Cary	Date: 8-27-21	

TICKET 44

ID 665375
GROSS 80940 LBINBOUND
01:02PM 08/27/2021
OUTBOUND TICKET 44

GROSS 80940 LB RECEIVED
TARE 33620 LB
NET 47320 LB

NET 23.66 TON

02:56PM 08/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 24230

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC.
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48255

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.25	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225358			
		RAIL CAR# EPIX91075			
		ERG# 171 H038			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordeau Date: 9-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per:
Date:

TICKET 20

ID 653375
GROSS 02580 LBINBOUND
09:33AM 09/15/2021

OUTBOUND TICKET 20

GROSS 02580 LB RECALLED
TARE 53000 LB
NET 48040 LB

NET 24.44 TON

10:50AM 09/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703871

WEIGHED BY _____

762911

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48256

SHIPPER'S INSTRUCTIONS

VH

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225148 RAIL CAR# EPIX91075 ERG# 171 H039	CM	23.40	T

NKP

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC | Carrier: CSX Transportation

Per: [signature] Date: 7/28/21 Per: Luis Castro Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: [signature] 9-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Counts
Date: 9/15/2021

TICKET 40

ID 652592..
GROSS 01640 lbUNBOUND
12:00PM 09/15/2021

GROSS 32320 lb
02:18PM 09/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762911

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075C

162886

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tribute 48257

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA	CM	24.03	T
		IM CONTAINER# EPIU225317			
		RAIL CAR# EPIX91075			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 9-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9/15/21

EPA 35517

TICKET 16

ID
GROSS 02560 lbINBOUND
08:47AM 09/15/2021

OUTBOUND TICKET 16

GROSS 02560 lb RECALLED
TARE 54320 lb
NET 48240 lb

NET 24.12 TON

16:34PM 09/15/2021

CP

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 142886

WEIGHED BY _____

7(2884

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Trlwb 49258

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA	CM	23.75	T
		IM CONTAINER# EPIU225308			
		RAIL CAR# EPIX91075			
		ERG# 171 H039			

MA

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 7/28/21

Carrier: CSX Transportation
Per: Luis Castro Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodleaux Date: 9-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 9/15/2021	

EPA 3333308

TICKET 14

ID 652592
GROSS 80460 LBINBOUND
08:38AM 09/15/2021

OUTBOUND TICKET 14

GROSS 80460 LB RECYCLED
TARE 32980 LB
NET 47480 LB

NET 23.74 TON

09:54AM 09/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762884

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762920

DOCUMENT # 91075E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 4059

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.30	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225137			
		RAIL CAR# EPIX91075			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC | Carrier: CSX Transportation

Per: | Date: 7/28/21 | Per: Luis Castro | Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc | Certification of receipt of materials

Per: Carrie Dumbleau | Date: 9-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date:

TICKET 51

ID 655575
GROSS 82460 lb INBOUND
01:19PM 09/15/2021

OUTBOUND TICKET 51

GROSS 82460 lb RECALLED
TARE 33600 lb
NET 48860 lb

NET 24.43 TON

02:49PM 09/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762920

WEIGHED BY _____

762913

Bill of Lading (Page 1 of 2)

DOCUMENT # 91075F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48260

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA	CM	23.68	T
		IM CONTAINER# EPIU225391			
		RAIL CAR# EPIX91075			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Karl Narbonne Date: 5-15-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91075F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per:
Date: 9-15-21

TICKET 44

ID 653160..
GROSS 01240 lb INBOUND
12:19PM 09/15/2021

OUTBOUND TICKET 44

GROSS 81240 lb RECEIVED
TARE 34920 lb
NET 46920 lb

NET 23.96 TON

02:29PM 09/15/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76 9 13

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76293

DOCUMENT # 91525-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 98234

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	22.60	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225113			
		RAIL CAR# EPIX91525-3			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/29/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbaugh Date: 9-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91525-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Derrick Gary	Date: 9-16-21	

EPA 935 115

TICKET 26

ID 653375
GROSS 79660 LBINBOUND
09:33AM 09/16/2021

OUTBOUND TICKET 26

GROSS 79660 lb RECALLED
TARE 33200 lb
NET 46460 lb

NET 23.00 TON

11:26AM 09/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762737

WEIGHED BY _____

762968

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

T12WD 48237

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ,UN3077,ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.II (BENZENE)	CM	23.55	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225300			
		RAIL CAR# EPIX91525-3			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shippers certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 9-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91525-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Cantu	Date: 9/16/2021	

TICKET 54

ID 652592
GROSS 79740 lbINBOUND
12:45PM 09/16/2021

OUTBOUND TICKET 54

GROSS 79740 lb RECALLED
TARE 32160 lb
NET 47580 lb

NET 23.79 TON

02:27PM 09/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 700-718

WEIGHED BY _____

762934

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 68239

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	23.60	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226251			
		RAIL CAR# EPIX91525-3			
		ERG# 171 H039			

KH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carmen Dubois Date: 9-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 81525-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9.16.21	

TICKET ID

ID 653160
GROSS 83380 LBOUNDBOUND
08:52AM 09/16/2021

OUTBOUND TICKET ID

GROSS 83380 LB RECYCLED
TARE 35600 LB
NET 47780 LB

NET 23.89 TON

10:56AM 09/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702934

WEIGHED BY _____

762931

Bill of Lading (Page 1 of 2)

DOCUMENT # 91525-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tpkts 4240

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.10	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225085			
		RAIL CAR# EPIX91525-3			
		ERG# 171 · H039			

NM

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Date: 9-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91526-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Joseph Cole	Date: 9/16/20	

EPA ID 652592

TICKET 13

ID 652592
GROSS 70040 LB INBOUND
08:17AM 09/16/2021

OUTBOUND TICKET 13

GROSS 70540 LB RECALLED
TARE 32320 LB
NET 46520 LB

NET 23.26 TON

10:30AM 09/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70931

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762955

DOCUMENT # 91525-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 048791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Tickets 48241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.70	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225202			
		RAIL CAR# EPIX91525-3			
		ERG# 171 H039			

NA

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Terrie Dembodeaux Date: 9-17-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91525-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Derrick Carey	Date: 9.17.21	

EPA 553302

TICKET 11

ID 653375
GROSS 81680 lbINBOUND
08:14AM 09/17/2021

OUTBOUND TICKET 11

GROSS 81640 lb RECALLED
TARE 35720 lb
NET 45260 lb

NET 24.13 TON

09:20AM 09/17/2021

CP

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702755

WEIGHED BY _____

CP 9/17

Bill of Lading (Page 1 of 2)

762951

DOCUMENT # 91525-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 49242

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	23.10	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225383			
		RAIL CAR# EPIX91525-3			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9 Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dumbodeaux	Date: 9-16-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91525-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	9-16-21

EPA 23
TICKET 59 5353

ID 655168
GROSS 01440 lb INBOUND
01:14PM 09/16/2021

OUTBOUND TICKET 59

GROSS 01440 lb RECALLED
TARE 34800 lb
NET 46640 lb

NET 23.32 TON

02:49PM 09/16/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760751

WEIGHED BY _____

760858

Bill of Lading (Page 1 of 2)

DOCUMENT # 91074-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 4921

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ,UN3077,ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, 9, III (BENZENE)	CM	23.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225343			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier:CSX Transportation	
Per:	Date: 7/30/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chubodeaux Date: 9-17-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: Joseph Courville	Date:	9/17/2021

EPA 20 3 4 5

TICKET 19

ID 652592
GROSS 79160 LB INBOUND
08:54AM 09/27/2021

OUTBOUND TICKET 19

GROSS 79160 LB RECORDED
TARE 65680 LB
NET 65480 LB

NET 25.24 TON

10:40AM 09/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702958

WEIGHED BY

Bill of Lading (Page 1 of 2)

7692669

DOCUMENT # 91074-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48263

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225150			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9 Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dembodeaux Date: 9-17-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per: [signature]	Date: 9.17.21	

TICKET 39

ID 653575
GROSS 82500 LB INBOUND
11:39AM 09/17/2021

OUTBOUND TICKET 39

GROSS 82500 LB RECALLED
TARE 53340 LB
NET 29160 LB

NET 24.60 TON

02:13PM 09/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1427609

WEIGHED BY _____

762956

Bill of Lading (Page 1 of 2)

DOCUMENT # 91074-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.18	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225304			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/29/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201 (a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubuclaux Date: 9-17-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt Per:	Date: 9-17-21	

EPA 30220

TICKET 14

ID 653160
GROSS 81640 lb INBOUND
08:29AM 09/17/2021

OUTBOUND TICKET 14

GROSS 81640 lb RECALLED
TARE 34740 lb
NET 46900 lb

NET 23.45 TON

10:19AM 09/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70250

WEIGHED BY _____

762969

Bill of Lading (Page 1 of 2)

DOCUMENT # 91074-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Toledo 43615

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.70	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225037			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation	
Per:	Date: 7/28/21	Per: Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49 Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc. Certification of receipt of materials

Per: Amanda DeVille Date: 9-17-21

762969

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9.17.21	

TICKET 44

ID 653160
GROSS 82520 lb INBOUND
12:10PM 09/17/2021

OUTBOUND TICKET 44

GROSS 82520 lb RECALLED
TARE 34660 lb
NET 47860 lb

NET 23.93 TON
02:40PM 09/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 710968

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762974

DOCUMENT # 91074-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.88	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225299			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC	Carrier: CSX Transportation
Per: [signature] Date: 7/28/21	Per: Luis [signature] here Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 9-20-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2E

TO

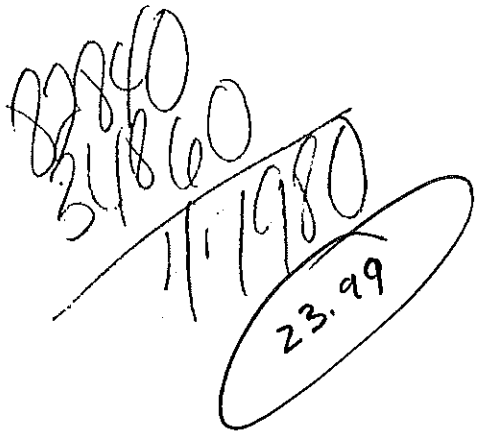
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9-20-21	

EPI4225299



CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762976

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762970

DOCUMENT # 91074-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 48267

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.00	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225283			
		RAIL CAR# EPIX91074-2			
		ERG# 171 H039			

NM

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Transportation Per:	
Per:	Date: 7/28/21	Luis Castro	Date: 7/30/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rinkenbaugh Date: 9-17-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91074-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Conde	Date: 9/17/2021	

EPA 225283

TICKET 51

ID 652592
GROSS 78900 lb INBOUND
12:42PM 09/17/2021

OUTBOUND TICKET 51

GROSS 78900 lb RECALLED
TARE 32600 lb
NET 46300 lb

NET 23.15 TON

02:58PM 09/17/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762720

WEIGHED BY _____

76-2809

Bill of Lading (Page 1 of 2)

DOCUMENT # 1085-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48881

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.10	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225110			
		RAIL CAR# EPIX91085			
		ERG# 171 H039			

N

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver or to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and condklons in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Date: 9-10 -21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Conkle	Date: 9/10/2021	

TICKET 55

ID 652592..
GROSS 81340 lbINBOUND
12:36PM 09/10/2021

OUTBOUND TICKET 55

GROSS 81340 lb RECALLED
TARE 32360 lb
NET 48980 lb

NET 24.49 TON

02:41PM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762809

WEIGHED BY _____

762813

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 090
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48882

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID, N.O.S. 9.III (BENZENE)	CM	24.15	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226342			
		RAIL CAR# EPIX91085			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Rembaddaux Date: 9-10-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Jose Hernandez	Date: 9-10-2021	

EPA22S 342

TICKET 65

ID 653501
GROSS 79380 lbINBOUND
01:56PM 09/10/2021

OUTBOUND TICKET 65

GROSS 79380 lb RECALLED
TARE 30460 lb
NET 48920 lb

NET 24.46 TON

03:26PM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

762813

RECEIVING TICKET # _____

WEIGHED BY _____

762790

Bill of Lading (Page 1 of 2)

DOCUMENT # 91085-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 48883

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.60	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU2257988			
		RAIL CAR# EPIX91085			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 8. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Peabody Date: 9-10-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Derrick Cox	Date: 9-10-21

EPA122178

TICKET 25

ID 653375
GROSS 79680 lbINBOUND
09:21AM 09/10/2021

OUTBOUND TICKET 25

GROSS 79680 lb RECALLED
TARE 62980 lb
NET 46700 lb

NET 23.35 TON

11:07AM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702790

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762289

DOCUMENT # 91085-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48884

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID, N.O.S. 9, III (BENZENE)	CM	23.23	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225360			
		RAIL CAR# EPIX91085			
		ERG# 171 H038			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 8/4/21	Per: Luis Castro		Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc — Certification of receipt of materials

Per: [signature] Date: 9-10-21

Carrie Ambodeans

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9-10-21	

EPI422)36

TICKET 23

ID 653501
GROSS 77540 lbINBOUND
09:04AM 09/10/2021

OUTBOUND TICKET 23

GROSS 77540 lb RECALLED
TARE 30600 lb
NET 46940 lb

NET 23.47 TON

10:48AM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762789

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762786

DOCUMENT # 91085-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/el 1241
Tidd 48885

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.18	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225129			
		RAIL CAR# EPIX91085			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Anne Dubodeaux	Date: 9-10-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91085-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph	Date: 9/10/2021	

EPA 223129

TICKET 19

ID 652592
GROSS 81300 lb INBOUND
08:36AM 09/10/2021

OUTBOUND TICKET 19

GROSS 81300 lb RECALLED
TARE 32480 lb
NET 48820 lb

NET 24.41 TON

10:05AM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762786

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762020

DOCUMENT # 91085-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 48886

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	24.10	T
		PROFILE: 989643LA			
		IM CONTAINER# EPIU225328			
		RAIL CAR# EPIX91085			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/ADeville	Date: 09-02-21

7/02/20

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91085-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph	Date: 9/1/2021	

TICKET 7

ID 652592
GROSS 81660 INBOUND
07:23AM 09/02/2021

OUTBOUND TICKET 7

GROSS 81660 lb RECEIVED
TARE 32320 lb
NET 49340 lb
NET 24.67 TON

01:37PM 09/02/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76562

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91060-2A 76285?

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 4882

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.70	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226193			
		RAIL CAR# EPIX91080			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 9-14-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91060-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Donald Cuary	Date: 9.14.21	

EPI422593

TICKET 12

ID 653375
GROSS 82040 lbINBOUND
09:06AM 09/14/2021

OUTBOUND TICKET 12

GROSS 82040 lb RECALLED
TARE 34340 lb
NET 47700 lb

NET 23.85 TON

11:05AM 09/14/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762857

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT# 91060-2B

762869

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48853

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	24.38	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225353			
		RAIL CAR# EPIX81080			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(e) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubordeau	Date: 9-14-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91060-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9.14.21	

TICKET 38 225353

ID 653168
GROSS 83640 lbINBOUND
12:05PM 09/14/2021

OUTBOUND TICKET 38

GROSS 83640 lb RECALLED
TARE 34360 lb
NET 49280 lb

NET 24.64 TON

02:11PM 09/14/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702809

WEIGHED BY _____

4415

Bill of Lading (Page 1 of 2)

7Q2853

DOCUMENT # 91060-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 98854

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	23.75	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225322			
		RAIL CAR# EPIX91080			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordieux Date: 9-14-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91060-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date:	

EPA 325502

TICKET 8

ID 653160
GROSS 82700 lb INBOUND
08:32AM 09/14/2021

OUTBOUND TICKET 8

GROSS 82700 lb RECALLED
TARE 34400 lb
NET 48300 lb

NET 24.15 TON

09:53AM 09/14/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760853

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

762856.

DOCUMENT # 91060-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

T Rail 48855

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.30	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225165			
		RAIL CAR# EPIX91060			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 8/4/21	Per: Luis Castro		Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from this requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dembodeaux Date: 9-14-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91060-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9/14/2021	

EPI422>16

TICKET 10

ID 652592
GROSS 81240 lbINBOUND
08:56AM 09/14/2021

OUTBOUND TICKET 10

GROSS 81240 lb RECALLED
TARE 32120 lb
NET 49120 lb

NET 24.56 TON

10:29AM 09/14/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762856

WEIGHED BY _____

*1115

Bill of Lading (Page 1 of 2)

762879

DOCUMENT # 91060-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48856

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	24.25	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226284			
		RAIL CAR# EPIX91060			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunbar Date: 9-14-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91080-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Darrell Cox	Date: 9.14.21	

EPI4223204

TICKET 47

ID 653375
GROSS 83200 lbINBOUND
01:27PM 09/14/2021

OUTBOUND TICKET 47

GROSS 83200 lb RECALLED
TARE 34040 lb
NET 49160 lb

NET 24.58 TON

02:55PM 09/14/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702876

WEIGHED BY _____

762875

Bill of Lading (Page 1 of 2)

DOCUMENT # 91060-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Tribute 48857

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	22.64	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225356			
		RAIL CAR# EPIX91080			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC			Carrier: CSX Railroad Corp		
Per:	[signature]	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21	

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 9-14-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91080-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company		
Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Joseph	Date: 9/14/2021	

EPA22554

TICKET 45

ID 652592
GROSS 78320 lbINBOUND
01:13PM 09/14/2021
OUTBOUND TICKET 45

GROSS 78320 lb RECALLED
TARE 32600 lb
NET 45720 lb

NET 22.86 TON

02:31PM 09/14/2021

60

1131

32600
45720

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

60

RECEIVING TICKET # 762875

WEIGHED BY _____

4415

262436

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48875

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225223			
		RAIL CAR# EPIX91506			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordieux Date: 9-13-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91506-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Conaville	Date: 9/13/2021	

TICKET 33

ID 652592
GROSS 79320 lb INBOUND
12:01PM 09/13/2021

OUTBOUND TICKET 33

GROSS 79320 lb RECALLED
TARE 32300 lb
NET 47020 lb

NET 23.51 TON

02:03PM 09/13/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702836

WEIGHED BY _____

762842

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2160

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/el 1241

Ticket 488776

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.68	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225200			
		RAIL CAR# EPIX91508			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/ADeville	Date: 09-13-21

76842

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91506-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Darrell McCar,	Date: 9.13.21	

TICKET 39

ID 653375
GROSS 83080 lbINBOUND
12:52PM 09/13/2021

OUTBOUND TICKET 39

GROSS 83080 lb RECALLED
TARE 34140 lb
NET 48940 lb

NET 24.47 TON

03:25PM 09/13/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702842

WEIGHED BY _____

762521

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

48877

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.08	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225088			
		RAIL CAR# EPIX91506			
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dunhodeau Date: 9-13-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91506-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049781 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc.	LA0000147272	(800) 336-2169
Acknowledgement of Receipt		
Per: Derrick Cogy	Date: 9-13-21	

EPA 5088

TICKET 12

ID 653375
GROSS 82980 LbINBOUND
09:05AM 09/13/2021

OUTBOUND TICKET 12

GROSS 82980 lb RECALLED
TARE 34300 lb
NET 48680 lb

NET 24.34 TON

10:21AM 09/13/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760821

WEIGHED BY

762820

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/at 1241

Ticket #88778

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	24.03	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225373			
		RAIL CAR# EPIX91506			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devitt Date: 9-13-21

702820

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91506-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 040791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9-13-21	

TICKET #
ID
GROSS 83000 lb INBOUND
08:52AM 09/13/2021

OUTBOUND TICKET #

GROSS 83000 lb RECALLED
TARE 46600 lb
NET 36400 lb

NET 18.20 TON

02:28PM 09/13/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762820

WEIGHED BY _____

762818

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48879

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.18	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225204			
		RAIL CAR# EPIX91506			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on BVs of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Cameron Rochelleaux	Date: 9-13-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91506-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Conde	Date: 9/13/2021	

EPA 225209

TICKET 7

ID 652592
GROSS 81080 lb INBOUND
08:27AM 09/13/2021

OUTBOUND TICKET 7

GROSS 81080 lb RECALLED
TARE 32420 lb
NET 48660 lb

NET 24.33 TON

09:45AM 09/13/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 702818

WEIGHED BY _____

160241

Bill of Lading (Page 1 of 2)

DOCUMENT # 91506-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48880

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.98	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225208			
		RAIL CAR# EPIX91506			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordeaux Date: 9-10-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91506-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9/10/21	

EPI 14 225208

TICKET 62

ID 653375
GROSS 81440 lbINBOUND
01:35PM 09/10/2021
OUTBOUND TICKET 62

GROSS 81440 lb RECALLED
TARE 32940 lb
NET 48500 lb

NET 24.25 TON

03:03PM 09/10/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 762811

WEIGHED BY _____

4 4/15

Bill of Lading (Page 1 of 2)

DOCUMENT# 91434-3A 763158

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 45894

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.20	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225143			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(e)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordieux Date: 9-29-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: joseph connelle	Date: 9/29/2021	

TICKET 16

ID 653153
GROSS 81960 LBINBOUND
08:50AM 09/29/2021

OUTBOUND TICKET 16

GROSS 81960 lb RECALLED
TARE 35200 lb
NET 46760 lb

NET 23.38 TON

10:43AM 09/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703158

WEIGHED BY _____

765159

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 48845

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III (BENZENE)	CM	23.75	T
		PROFILE: 889843LA			
		IM CONTAINER# EPIU225327			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Aimee Dubodeau Date: 9-29-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 048791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: LaShun Bellard	Date: 9-29-21	

EPA ID 2502

TICKET 17

ID 653204
GROSS 82360 lb INBOUND
08:56AM 09/29/2021

OUTBOUND TICKET 17

GROSS 82360 lb RECALLED
TARE 34860 lb
NET 47500 lbs

NET 23.75 TON

11:09AM 09/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763159

WEIGHED BY _____

763149

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tank 48846

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.86	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225335			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devilbiss Date: 09-28-21

763149

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9-28-21	

E-P/L/4-2-) 53?

TICKET 39 (A)

ID 653168
GROSS 82700 lb OUTBOUND
01:19PM 09/28/2021

OUTBOUND TICKET 39

GROSS 82700 lb RECALLED
TARE 34620 lb
NET 48080 lb

NET 24.04 TON

02:56PM 09/28/2021

(P

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76348

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763150

DOCUMENT # 91434-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tidal 4884

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.60	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225346			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(e)(1) (ii) of Title 49 Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: 9-28-21

Amanda Deitly / Deitly

763150

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Lathun Belland	Date: 9-28-21	

EPI 4 22-) 5'10

TICKET 40 AD

ID 653204
GROSS 82480 lbINBOUND
01:22PM 09/28/2021

OUTBOUND TICKET 40

GROSS 82480 lb RECALLED
TARE 35020 lb
NET 47460 lb

NET 23.73 TON

03:23PM 09/28/2021

CD

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763150

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91434-3E 763155

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2188

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 488478

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.40	T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU2251849 5189 (B)			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Cruthoff	Date: 9-29-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 048791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 9-29-21	

EPM 353161

TICKET 13

ID 653160
GROSS 83660 lbINBOUND
08:22AM 09/29/2021

OUTBOUND TICKET 13

GROSS 83660 lb RECALLED
TARE 34460 lb
NET 49200 lb

NET 24.60 TON

10:10AM 09/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763155

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76315/

DOCUMENT # 91434-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Tcket 48849

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	23.33	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225038			
		RAIL CAR# EPIX91434			
		ERG# 171 H039			

AH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chatelain Date: 9-28-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91434-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Courville	Date: 9/28/2021	

tr1422038

TICKET 41

ID 653153
GROSS 82260 lbINBOUND
01:25PM 09/28/2021

OUTBOUND TICKET 41

GROSS 82260 lb RECALLED
TARE 35280 lb
NET 46980 lb

NET 23.49 TON

03:58PM 09/28/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763151

WEIGHED BY _____

163468 UU91436-2A

763248

Bill of Lading (Page 1 of 2)

DOCUMENT # 91436-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) 1241

Ticket 48892

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	23.78	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225359			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda DeVilbiss/ADeVilbiss	Date: 10-04-21

763248

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91436-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 589-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 10-4-21	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

053204 0091436-2B 763264

Bill of Lading (Page 1 of 2)

DOCUMENT # 91436-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Trdat 8893

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.28	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225312			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 10-4-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91436-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2168

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Kathleen Ballard	Date: 10-4-21	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 103264

WEIGHED BY _____

652168 0091436-2C 763239

Bill of Lading (Page 1 of 2)

DOCUMENT # 91436-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 096
City/State/Zip: PHILADELPHIA, PA 19146
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4(a) 1241
Ticket 48894

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9, III (BENZENE)	CM	23.65	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225288			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Deville/ADeville	Date: 10-01-21

Bill of Lading {Continuation Sheet) 2 of 2

763239

DOCUMENT# 91436-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 10-1-21	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

05892 DUP1436-2D

Bill of Lading (Page 1 of 2)

763246

DOCUMENT # 91436-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 48895

SHIPPERS INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.05	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225365			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if applicable to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 8. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cawthorn Date: 10-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91436-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Conde	Date: 10/01/2021	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 1605446

WEIGHED BY _____

053168 0091430-2E

763258

Bill of Lading (Page 1 of 2)

DOCUMENT # 91436-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241
Ticket 48896

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	24.38	T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU226205			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Amanda Devilly	Date: 10-04-21

763258

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91436-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 10-4-21	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

W22592

D0914360-2F

Bill of Lading (Page 1 of 2)

DOCUMENT # 91436-2F

263250

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Tribet 98797

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	23.80	T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU226388			
		RAIL CAR# EPIX91436			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per:	Date: 8/4/21	Per: Luis Castro	Date: 8/6/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carne Chubodeaux Date: 10-4-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91436-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Joseph Connelly	Date: 10/4/2021	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70250

WEIGHED BY _____

P 152204

08/10/21-ZH

763228

Bill of Lading (Page 1 of 2)

DOCUMENT # 91069-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50045

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225374 RAIL CAR# EPIX91069	CM	23.63	T
		ERG# 171 H039			

NK

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/18

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/18/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville [signature] Date: 10-01-21

Bill of Lading (Continuation Sheet) 2 of 2

763238

DOCUMENT# 91069-2A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: LaShun Bellard Date: 10-1-24

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70536

WEIGHED BY _____

153168 0091069-2B 763229

Bill of Lading (Page 1 of 2)

DOCUMENT # 91069-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

SHIPPER'S INSTRUCTIONS

Tricon 50646

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225056 RAIL CAR# EPIX91069	CM	24.10	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials
Per: Carrie Duhon Date: 10-1-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91069-2B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 10-1-21

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 705227

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

7U321

DOCUMENT # 91069-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 30049

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225166 RAIL CAR# EPIX91069 ERG# 171 H039	CM	23.83	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: | Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro | Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: AmandaDeville/AQuills | Date: 09-30-21

Bill of Lading {Continuation Sheet) 2 of 2

763217

DOCUMENT# 91069-2C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-30-21

GPIL122516b

TICKET 51 AD

ID 653168
GROSS 82780 lbINBOUND
12:18PM 09/30/2021
OUTBOUND TICKET 51

GROSS 82780 lb RECALLED
TARE 35020 lb
NET 47760 lb

NET 23.88 TON

03:05PM 09/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76327

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763218

DOCUMENT # 91069-2D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50048

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225120 RAIL CAR# EPIX91069 ERG# 171 H039	CM	23.95	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Amanda Deville [signature] Date: 09-30-21

Bill of Lading (Continuation Sheet) 2 of 2

763218

DOCUMENT# 91069-2D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC Street: 7170 JOHN BRANNON ROAD EPA ID: LAD000777201 City/State/Zip: SULPHUR LA 70665 Phone: (337) 583-2169	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC Street: 3144 PASSYUNKAVE EPA ID: PAD 049781 098 City/State/Zip: PHILADELPHIA, PA 19145 Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-30-21

TICKET 53

ID 653204
GROSS 83560 lbINBOUND
12:28PM 09/30/2021

GROSS 35100 lb
03:04PM 09/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763218

WEIGHED BY _____

1053204 0091069-2E 163240

Bill of Lading (Page 1 of 2)

DOCUMENT # 91069-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tricor 50049

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225133 RAIL CAR# EPIX91069 ERG# 171 H039	CM	24.05	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172 204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Devilla/Quilla Date: 10-01-21

Bill of Lading (Continuation Sheet) 2 of 2

763240

DOCUMENT# 91069-2E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: [signature]
Date: 10-1-21

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91069-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tribute $0040

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969643LA IM CONTAINER# EPIU225214 RAIL CAR# EPIX91069 ERG# 171 H039	CM	23.53	T

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: Date:

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cawbody Date: 10-01-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91069-2F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Courville
Date: 10/1/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760322

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763033

DOCUMENT # 91475A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50141

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225191 RAIL CAR# EPIX91476 ERG# 171 H039	CM	23.13	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/11/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubadlaux Date: 9-22-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Date: 9/22/2021

EPI422519

TICKET 14

ID 652592
GROSS 78900 lb INBOUND
08:33AM 09/22/2021

OUTBOUND TICKET 14

GROSS 78900 lb RECALLED
TARE 32260 lb
NET 46640 lb

NET 23.32 TON

10:12AM 09/22/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763053

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763048

DOCUMENT # 91475B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 086
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tidd 5042

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	LION
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225364 5369 AD/PD RAIL CAR# EPIX91475 ERG# 171 H039	CM	24.40	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: [illegible]

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: 09-22-21

76048

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Connelle Date: 9/22/2021

TICKET 36

ID 652592
GROSS 81620 lbINBOUND
12:23PM 09/22/2021

OUTBOUND TICKET 36

GROSS 81620 lb RECALLED
TARE 32280 lb
NET 49340 lb

NET 24.67 TON

03:30PM 09/22/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763048

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91475C 763021

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50193

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225236 RAIL CAR# EPIX91475 ERG# 171 H039	CM	24.13	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [illegible] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubordeaux Date 9-21-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Comilla Date: 9/21/2021

EPI422328

TICKET 53

ID 652592
GROSS 80980 lbINBOUND
01:44PM 09/21/2021
OUTBOUND TICKET 53

GROSS 80980 lb RECALLED
TARE 32840 lb
NET 48140 lb

NET 24.07 TON

03:32PM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763021

WEIGHED BY _____

*115

Bill of Lading (Page 1 of 2)

160307

DOCUMENT # 91475D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50144

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225155 RAIL CAR# EPIX91475 ERG# 171 H039	CM	24.10	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/18/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials
Per: Carrie Rembodeaux Date: 9-22-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Derrick Gary Date: 9-22-21

EPA 225.

TICKET 19

ID 653375
GROSS 82580 lbINBOUND
09:11AM 09/22/2021
OUTBOUND TICKET 19

GROSS 82580 lb RECALLED
TARE 33800 lb
NET 48780 lb

NET 24.39 TON

10:29AM 09/22/2021

10

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763037

WEIGHED BY _____

A1115

Bill of Lading (Page 1 of 2)

263050

DOCUMENT # 91475E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50145

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225292 RAIL CAR# EPIX91475 ERG# 171 H039	CM	24.30	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: | Date: 8/18/21

Carrier: CSX Railroad Corp

Per: Luis Castro | Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Carrie Dubordieux | Date: 9-22-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91475E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Derrick Bray Date: 9-22-21

EPA 422329

TICKET 40

ID 653375
GROSS 83160 lbINBOUND
01:05PM 09/22/2021

OUTBOUND TICKET 40

GROSS 83160 lb RECALLED
TARE 33820 lb
NET 49340 lb

NET 24.67 TON

02:30PM 09/22/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

763050

RECEIVING TICKET # _____

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763038

DOCUMENT # 91475F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50146

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	LOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225180 RAIL CAR# EPIX91475 ERG# 171 H039	CM	23.88	T

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Amanda Deville/Quille Date: 09-22-21

763038

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91475F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNK AVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-22-21

TICKET 20

ID 653168
GROSS 82860 lbINBOUND
09:19AM 09/22/2021

OUTBOUND TICKET 20

GROSS 82860 lb RECALLED
TARE 34860 lb
NET 48000 lb

NET 24.00 TON

11:11AM 09/22/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763038

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

963109

DOCUMENT # 91117A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tribute 50147

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225232 RAIL CAR# EPIX91117 ERG# 171 H039	CM	23.03	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubaleau Date: 9-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91117A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Derrick Gary Date: 9-24-21

TICKET 49

ID 653375
GROSS 79920 lbINBOUND
01:47PM 09/24/2021

OUTBOUND TICKET 49

GROSS 79920 lb RECALLED
TARE 33500 lb
NET 46420 lb

NET 23.21 TON

03:29PM 09/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763109

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763112

DOCUMENT # 91117B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50148

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225257 RAIL CAR# EPIX91117 ERG# 171 H039	CM	24.03	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: Date: 8/19

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Amanda Deville/ADeville Date: 09-27-21

Bill of Lading {Continuation Sheet) 2 of 2

763112

DOCUMENT# 91117B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-27-21

EPA 032021

TICKET 8

ID 655168
GROSS 83240 lb INBOUND
08:19AM 09/27/2021

OUTBOUND TICKET 8

GROSS 83240 lb RECALLED
TARE 35400 lb
NET 47840 lb

NET 23.92 TON

09:46AM 09/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763112

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91117C

763101

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2189

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50149

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225179 RAIL CAR# EPIX91117 ERG# 171 H039	CM	23.18	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Carrier: CSX Railroad Corp

Per: | Date: | Per: Luis Castro | Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Annie Dubodeaux Date: 9-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91117C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Date: 9/24/2021

E1114233179

TICKET 34

ID 653153
GROSS 81500 lbINBOUND
11:40AM 09/24/2021

OUTBOUND TICKET 34

GROSS 81500 lb RECALLED
TARE 34860 lb
NET 46640 lb

NET 23.32 TON

02:38PM 09/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703101

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91117D

763102

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/at 1241

Ticket 50150

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225212 RAIL CAR# EPIX91117 ERG# 171 H039	CM	23.25	T

NM

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature]
Date: 8/18/21

Carrier: CSX Railroad Corp
Per: Luis Castro
Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc
Certification of receipt of materials
Per: Carrie Dubordeaux
Date: 9-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91117D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 7-24-21

EPA122212

TICKET 36

ID 653168
GROSS 81300 lbINBOUND
11:56AM 09/24/2021

OUTBOUND TICKET 36

GROSS 81300 lb RECALLED
TARE 34420 lb
NET 46880 lb

NET 23.44 TON

02:35PM 09/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 765102

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

760323

DOCUMENT # 91117E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tickets 50151

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU224134 RAIL CAR# EPIX91117 ERG# 171 H039	CM	24.40	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Richardeaux Date: 9-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91117E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-27-21

EPA 02-11 59

TICKET 35

ID 653160
GROSS 04400 lbINBOUND
12:13PM 09/27/2021

OUTBOUND TICKET 35

GROSS 04400 lb RECALLED
TARE 35020 lb
NET 42380 lb

NET 24.69 TON

02:59PM 09/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703103

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763117

DOCUMENT # 91117F

9

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50152

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 989843LA IM CONTAINER# EPIU225147 RAIL CAR# EPIX91117	CM	23.65	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per:

Date: 8/18/21

Carrier: CSX Railroad Corp

Per: Luis Castro

Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management Inc

Per: Anne Dumbellank

Certification of receipt of materials

Date: 9-27-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91117F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph [illegible] Date: 9/27/2021

EPA 22514;

TICKET 21
OUTBOUND TICKET 21
ID 652592
GROSS 80360 lb SCALED INBOUND
TARE 32220 lb 09/27/2021
NET 48140 lb

NET 24.07 TON

01:02PM 09/27/2021

GROSS 32220 lb
01:03PM 09/27/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76317

WEIGHED BY _____

P 415

Bill of Lading (Page 1 of 2)

763003

DOCUMENT # 91111-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50033

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225346 RAIL CAR# EPIX91111 ERG# 171 H039	CM	23.25	T

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc
Per: Amanda Deville/Amanda Deville Date: 09-21-21

Certification of receipt of materials

Bill of Lading (Continuation Sheet) 2 of 2

763003

DOCUMENT# 91111-3A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Combs Date: 9/20/2021

EPM22 3416

TICKET 9

ID 653375
GROSS 81120 lbINBOUND
07:23AM 09/21/2021

OUTBOUND TICKET 9

GROSS 81120 lb RECALLED
TARE 34020 lb
NET 47100 lb

NET 23.55 TON

09:09AM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763003

WEIGHED BY _____

4415

Bill of Lading (Page 1 of 2)

763007

DOCUMENT # 91111-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50035

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969843LA	CM	24.30	T
		IM CONTAINER# EPIU226249			
		RAIL CAR# EPIX91111			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Quibodeaux Date: 9-21-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91111-3B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-24-21

EPA 22524

TICKET 19

ID 653168
GROSS 83640 lbINBOUND
08:33AM 09/21/2021

OUTBOUND TICKET 19

GROSS 83640 lb RECALLED
TARE 34560 lb
NET 49080 lb

NET 24.54 TON

10:03AM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763007

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

)(e283

DOCUMENT # 91111-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50036

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225381 RAIL CAR# EPIX91111 ERG# 171 H039	CM	23.95	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: [illegible]

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Chubodeaux Date: 9-20-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91111-3C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Date: 9/20/2021

EPA 2021 561

TICKET 10

ID 653375
GROSS 81720 lbINBOUND
09:30AM 09/20/2021

OUTBOUND TICKET 10

GROSS 81720 lb RECALLED
TARE 44080 lb
NET 37640 lb

NET 23.82 TON

11:59AM 09/20/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760783

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763011

DOCUMENT # 91111-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50037

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225068 RAIL CAR# EPIX91111 ERG# 171 H039	CM	24.03	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 49, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Gene Dubodeaux Date: 9-21-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91111-3D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Conn Date: 9/21/2021

tP1422068

TICKET 23

ID 652592
GROSS 79080 lbINBOUND
09:01AM 09/21/2021

OUTBOUND TICKET 23

GROSS 79080 lb RECALLED
TARE 32940 lb
NET 46140 lb

NET 23.07 TON

11:23AM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763011

WEIGHED BY _____

415

Bill of Lading (Page 1 of 2)

76301?

DOCUMENT # 91111-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50038

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225073 RAIL CAR# EPIX91111 ERG# 171 H039	CM	24.35	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/18/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Amanda Devilbiss Date: 09-21-21

Bill of Lading (Continuation Sheet) 2 of 2 768019

DOCUMENT# 91111-3E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-21-21

TICKET 40

ID 653168
GROSS 83480 lbINBOUND
12:18PM 09/21/2021

OUTBOUND TICKET 40

GROSS 83480 lb RECALLED
TARE 33140 lb
NET 50340 lb

NET 25.17 TON

02:42PM 09/21/2021

GROSS 34280 lb

02:44PM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763019

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

DOCUMENT # 91111-3F

263018

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50039

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225293 RAIL CAR# EPIX91111 ERG# 171 H039	CM	23.93	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per:

Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro

Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Per: Carrie Rubadeaux

Certification of receipt of materials

Date: 9-21-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91111-3F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LA0000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9.21.21

EPA 223293

TICKET 36

ID 653375
GROSS 82600 lbINBOUND
11:39AM 09/21/2021

OUTBOUND TICKET 36

GROSS 82600 lb RECALLED
TARE 34480 lb
NET 48120 lb

NET 24.06 TON

01:40PM 09/21/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763018

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

703073

DOCUMENT # 91058A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50135

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969643LA IM CONTAINER# EPIU225082 RAIL CAR# EPIX91058 ERG# 171 H039	CM	24.13	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/18/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Amanda Deville Date: 09-23-21

Bill of Lading (Continuation Sheet) 2 of 2

76303

DOCUMENT# 91058A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-23-21

653168

TICKET 31

ID 653168
GROSS 83440 lb INBOUND
10:49AM 09/23/2021

OUTBOUND TICKET 31

GROSS 83440 lb RECALLED
TARE 34600 lb
NET 48840 lb

NET 24.42 TON

03:43PM 09/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763073

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

76079

DOCUMENT # 91058B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 58136

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969643LA IM CONTAINER# EPIU225161 RAIL CAR# EPIX91058	CM	24.30	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/11/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: 09-23-21

763078

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70685
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Date: 9/27/2021

TICKET 35

ID 652592
GROSS 81800 lbINBOUND
11:24AM 09/23/2021

OUTBOUND TICKET 35

GROSS 81800 lb RECALLED
TARE 32480 lb
NET 49320 lb

NET 24.66 TON

02:36PM 09/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763079

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058C 203052

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50137

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU224060 RAIL CAR# EPIX91058	CM	24.20	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 9-22-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-21-21

TICKET 52

ID 653168
GROSS 83660 lb INBOUND
01:50PM 09/22/2021

OUTBOUND TICKET 52

GROSS 83600 lb RECALLED
TARE 34920 lb
NET 48760 lb

NET 24.38 TON

03:52PM 09/22/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763052

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763077

DOCUMENT # 91058D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50138

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM	
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225207 RAIL CAR# EPIX91058 ERG# 171 H039	CM	24.33	T	NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc
Certification of receipt of materials
Per: Amanda DeVille /ADeVille Date: 08-23-21

763077

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-23-21

9/23/2021

TICKET 34

ID 654375
GROSS 83060 lb INBOUND
11:07AM 09/23/2021

OUTBOUND TICKET 34

GROSS 83060 lb RECALLED
TARE 53700 lb
NET 29360 lb

NET 24.68 TON

02:41PM 09/23/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 103077

WEIGHED BY _____

9/15

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058E

263094

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50139

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA	CM	24.33	T
		IM CONTAINER# EPIU225315			
		RAIL CAR# EPIX91058			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: [signature] Date: 9-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC Street: 7170 JOHN BRANNON ROAD EPA ID: LAD000777201 City/State/Zip: SULPHUR LA 70665 Phone: (337) 583-2169	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC Street: 3144 PASSYUNKAVE EPA ID: PAD 049791 098 City/State/Zip: PHILADELPHIA, PA 19145 Phone: (440) 226-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 9-24-21

TICKET 19

ID 653375
GROSS 82680 lbINBOUND
09:23AM 09/24/2021

OUTBOUND TICKET 19

GROSS 82680 lb RECALLED
TARE 33400 lb
NET 49280 lb

NET 24.64 TON

10:40AM 09/24/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703094

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT # 91058F 763092

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50140

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225077 RAIL CAR# EPIX91058 ERG# 171 H039	CM	23.83	T

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/18/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Carrie Dumboldaux Date: 9-24-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91058F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per:
Date: 9-23-21

EPH2250211 ID 653168
GROSS 81520 LbINBOUND
08:28AM 09/24/2021

GROSS 34480 Lb
08:42AM 09/24/2021

CP Net 47040

23.52

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 703092

WEIGHED BY _____

9-11

Bill of Lading (Page 1 of 2)

263177

DOCUMENT # 91431A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50153

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225011 RAIL CAR# EPIX91431	CM	23.80	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to Designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials
Per: Carrie Dunbodeaux Date: 9-29-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91431A

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1624

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Lathen Bellard Date: 9-29-21

EPA 2021011

TICKET 52

ID TICKET 52 653204
GROSS 83600 lbINBOUND
01:29PM 09/29/2021

OUTBOUND
GROSS 83600 lb RECALLED
TARE 35460 lb
NET 48140 lb
NET 03:57PM 09/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 10177

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

763174

DOCUMENT # 91431B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50155

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# ~~EPIU225664~~ EPIU225203 RAIL CAR# EPIX91431 SP ERG# 171 H039	CM	23.78	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: Date:

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Amanda Deville/ADeville Date: 9-29-21

Bill of Lading (Continuation Sheet) 2 of 2 763174

DOCUMENT# 91431B

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per: Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Date: 12-21-07

EPA 1122 2021

TICKET 38 AD

ID 653168
GROSS 82780 lbINBOUND
12:12PM 09/29/2021

OUTBOUND TICKET 38 AD

GROSS	82780 lb	RECALLED
TARE	34440 lb	
NET	48340 lb	

NET 24.17 TON

03:08PM 09/29/2021

AD

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763174

WEIGHED BY _____

9/15

Bill of Lading (Page 1 of 2)

DOCUMENT # 91431C 763187

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50156

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225~~203~~ 50647B RAIL CAR# EPIX81431 ERG# 171 H039	CM	23.98	T

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management Inc Certification of receipt of materials

Per: Carrie Duhon Date: 9-30-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91431C

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per:
Date: 5-30-23

E 111423 0604

TICKET 16

ID 653168
GROSS 04000 lbINBOUND
08:23AM 09/30/2021

OUTBOUND TICKET 16

GROSS 84000 lb RECALLED
TARE 35060 lb
NET 49060 lb

NET 24.50 TON

10:01AM 09/30/2021

CP

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 760317

WEIGHED BY _____

Washington

Bill of Lading (Page 1 of 2)

DOCUMENT # 91431D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50157

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE) PROFILE: 969843LA	CM	20.70	T
		IM CONTAINER# EPIU225109			
		RAIL CAR# EPIX91431			
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Per: [signature] Date: 8/19/21

Carrier: CSX Railroad Corp
Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials
Per: Carrie Dumbodeau Date: 9-29-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91431D

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph
Date: 9/29/2021

E/114-23 107

TICKET 53

TO TICKET 53 652592
GROSS 74240 TO INBOUND
01:31PM 09/29/2021

OUTBOUND

GROSS	74240 lb	RECALLED
TARE	32240 lb	
NET	42000 lb	

NET 21.00 TON

04:00PM 09/29/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 70828

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

DOCUMENT# 91431E

763193

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241

Ticket 50158

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225186 RAIL CAR# EPIX91431	CM	23.90	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature]

Date: 8/19/21

Carrier: CSX Railroad Corp

Per: Luis Castro

Date: 8/19/21

Mark with "X" or "RQ" if applicable to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Carrie Dunbadeaux

Date: 9-30-21

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91431E

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Joseph Combs
Date: 9/30/2021

EPA 2021

TICKET 35

ID 652592
GROSS 81020 lbINBOUND
10:25AM 09/30/2021

OUTBOUND TICKET 35

GROSS 81020 lb RECALLED
TARE 32620 lb
NET 48400 lb

NET 24.20 TON

01:28PM 09/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 763193

WEIGHED BY _____

Bill of Lading (Page 1 of 2)

7603188

DOCUMENT # 91431F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 226-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 50159

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE) PROFILE: 969843LA IM CONTAINER# EPIU225289 RAIL CAR# EPIX91431	CM	23.63	T
		ERG# 171 H039			

NH

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC

Per: [signature] Date: 8/18/21

Carrier: CSX Railroad Corp

Per: Luis Castro Date: 8/19/21

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc

Certification of receipt of materials

Per: Carrie Dubodleaux Date: 9-30-21

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91431F

TO

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company
Acknowledgement of Receipt
Per:
Date:

Carrier 3: Chemical Waste Management, Inc. LA0000147272 (800) 336-2169
Acknowledgement of Receipt
Per: Lathen Belland
Date: 9-30-21

EPA 225287

TICKET 1B

ID 653204
GROSS 82900 lb INBOUND
08:39AM 09/30/2021

OUTBOUND TICKET 1B

GROSS 82900 lb RECALLED
TARE 35440 lb
NET 47460 lb

NET 23.73 TON

10:21AM 09/30/2021

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 263188

WEIGHED BY _____

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. William Schmidt
Ransom Consulting LLC
2127 Hamilton Ave
Hamilton New Jersey 08619

JOB DESCRIPTION

PES Refinery

JOB NUMBER

680-223928-1

Eurofins Savannah
5102 LaRoche Avenue
Savannah GA31404

myEOL

Definitions/Glossary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-223928-1	GPR794-01R-SS01	Solid	10/21/22 12:00	10/25/22 10:30
680-223928-2	GPR794-02R-SS01	Solid	10/21/22 12:10	10/25/22 10:30
680-223928-3	GPR794-03R-SS01	Solid	10/21/22 12:20	10/25/22 10:30
680-223928-4	GPR794-04R-SS01	Solid	10/21/22 12:30	10/25/22 10:30
680-223928-5	GPR794-05R-SS01	Solid	10/21/22 12:40	10/25/22 10:30
680-223928-6	GPR794-06R-SS01	Solid	10/21/22 12:50	10/25/22 10:30
680-223928-7	GPR794-07R-SS01	Solid	10/21/22 13:00	10/25/22 10:30
680-223928-8	GPR794-08R-SS01	Solid	10/21/22 13:10	10/25/22 10:30

Case Narrative

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Job ID: 680-223928-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-223928-1

Revision
Per client request, the sample ID's have been revised.

Comments
No additional comments.

Receipt
The samples were received on 10/25/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.7º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: GPR794-01R-SS01 — Lab Sample ID: 680-223928-1

Date Collected: 10/21/22 12:00 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.8	U	9.5	2.8	mg/Kg			11/04/22 14:58	1

Client Sample ID: GPR794-02R-SS01 — Lab Sample ID: 680-223928-2

Date Collected: 10/21/22 12:10 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 15:20	1

Client Sample ID: GPR794-03R-SS01 — Lab Sample ID: 680-223928-3

Date Collected: 10/21/22 12:20 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 15:43	1

Client Sample ID: GPR794-04R-SS01 — Lab Sample ID: 680-223928-4

Date Collected: 10/21/22 12:30 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 16:06	1

Client Sample ID: GPR794-05R-SS01 — Lab Sample ID: 680-223928-5

Date Collected: 10/21/22 12:40 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.7	U	9.3	2.7	mg/Kg			11/04/22 16:29	1

Client Sample ID: GPR794-06R-SS01 — Lab Sample ID: 680-223928-6

Date Collected: 10/21/22 12:50 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.6	U	9.1	2.6	mg/Kg			11/04/22 16:51	1

Client Sample ID: GPR794-07R-SS01 — Lab Sample ID: 680-223928-7

Date Collected: 10/21/22 13:00 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.8	U	9.7	2.8	mg/Kg			11/04/22 17:14	1

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-08R-SS01
Date Collected: 10/21/22 13:10
Date Received: 10/25/22 10:30

Lab Sample ID: 680-223928-8
Matrix: Solid

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.7	U	9.3	2.7	mg/Kg			11/04/22 17:37	1

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 680-748612/1-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.8	2.9	mg/Kg			11/04/22 14:35	1

Lab Sample ID: LCS 680-748612/2-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Tetraethylene Glycol			39.6	41.7		mg/Kg		105	10 - 197		

Lab Sample ID: LCSD 680-748612/3-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetraethylene Glycol			37.2	34.8		mg/Kg		94	10 - 197	18	50

Lab Sample ID: 680-223928-7 MS
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: GPR794-07R-SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Tetraethylene Glycol	2.8	U	38.8	12.3		mg/Kg		32	10 - 197		

Lab Sample ID: 680-223928-7 MSD
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: GPR794-07R-SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetraethylene Glycol	2.8	U	40.0	20.2		mg/Kg		51	10 - 197	48	50

QC Association Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

GC Semi VOA

Leach Batch: 748612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Soluble	Solid	DI Leach	
680-223928-2	GPR794-02R-SS01	Soluble	Solid	DI Leach	
680-223928-3	GPR794-03R-SS01	Soluble	Solid	DI Leach	
680-223928-4	GPR794-04R-SS01	Soluble	Solid	DI Leach	
680-223928-5	GPR794-05R-SS01	Soluble	Solid	DI Leach	
680-223928-6	GPR794-06R-SS01	Soluble	Solid	DI Leach	
680-223928-7	GPR794-07R-SS01	Soluble	Solid	DI Leach	
680-223928-8	GPR794-08R-SS01	Soluble	Solid	DI Leach	
MB 680-748612/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 680-748612/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 680-748612/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
680-223928-7 MS	GPR794-07R-SS01	Soluble	Solid	DI Leach	
680-223928-7 MSD	GPR794-07R-SS01	Soluble	Solid	DI Leach	

Analysis Batch: 748845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Soluble	Solid	8015D	748612
680-223928-2	GPR794-02R-SS01	Soluble	Solid	8015D	748612
680-223928-3	GPR794-03R-SS01	Soluble	Solid	8015D	748612
680-223928-4	GPR794-04R-SS01	Soluble	Solid	8015D	748612
680-223928-5	GPR794-05R-SS01	Soluble	Solid	8015D	748612
680-223928-6	GPR794-06R-SS01	Soluble	Solid	8015D	748612
680-223928-7	GPR794-07R-SS01	Soluble	Solid	8015D	748612
680-223928-8	GPR794-08R-SS01	Soluble	Solid	8015D	748612
MB 680-748612/1-A	Method Blank	Soluble	Solid	8015D	748612
LCS 680-748612/2-A	Lab Control Sample	Soluble	Solid	8015D	748612
LCSD 680-748612/3-A	Lab Control Sample Dup	Soluble	Solid	8015D	748612
680-223928-7 MS	GPR794-07R-SS01	Soluble	Solid	8015D	748612
680-223928-7 MSD	GPR794-07R-SS01	Soluble	Solid	8015D	748612

General Chemistry

Analysis Batch: 748590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Total/NA	Solid	Moisture	
680-223928-2	GPR794-02R-SS01	Total/NA	Solid	Moisture	
680-223928-3	GPR794-03R-SS01	Total/NA	Solid	Moisture	
680-223928-4	GPR794-04R-SS01	Total/NA	Solid	Moisture	
680-223928-5	GPR794-05R-SS01	Total/NA	Solid	Moisture	
680-223928-6	GPR794-06R-SS01	Total/NA	Solid	Moisture	
680-223928-7	GPR794-07R-SS01	Total/NA	Solid	Moisture	
680-223928-8	GPR794-08R-SS01	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-01R-SS01
Lab Sample ID: 680-223928-1
Date Collected: 10/21/22 12:00
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.26 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 14:58	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-02R-SS01
Lab Sample ID: 680-223928-2
Date Collected: 10/21/22 12:10
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 15:20	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-03R-SS01
Lab Sample ID: 680-223928-3
Date Collected: 10/21/22 12:20
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.07 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 15:43	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-04R-SS01
Lab Sample ID: 680-223928-4
Date Collected: 10/21/22 12:30
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:06	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-05R-SS01
Lab Sample ID: 680-223928-5
Date Collected: 10/21/22 12:40
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.36 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:29	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-06R-SS01
Lab Sample ID: 680-223928-6
Date Collected: 10/21/22 12:50
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.48 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:51	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-07R-SS01
Lab Sample ID: 680-223928-7
Date Collected: 10/21/22 13:00
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.14 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 17:14	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-08R-SS01
Lab Sample ID: 680-223928-8
Date Collected: 10/21/22 13:10
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.37 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 17:37	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Laboratory References:
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-23
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas DEQ	State	19-015-0	02-01-23
California	State	2939	06-30-22 *
Connecticut	State	PH-0161	03-31-23
Florida	NELAP	E87052	06-23-23
Georgia	State	E87052	06-30-23
Georgia (DW)	State	803	06-30-23
Guam	State	19-007R	04-17-23
Hawaii	State	<cert No.>	06-30-23
Illinois	NELAP	200022	11-30-22
Indiana	State	C-GA-02	06-30-23
Iowa	State	353	07-01-23
Kentucky (UST)	State	NA	06-30-23
Louisiana	NELAP	30690	06-30-23
Louisiana (All)	NELAP	30690	06-30-23
Louisiana (DW)	State	LA009	12-31-22
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-22
Massachusetts	State	M-GA006	07-30-23
Michigan	State	9925	06-30-23
Mississippi	State	<cert No.>	06-30-23
Nebraska	State	NE-OS-7-04	06-30-23
New Jersey	NELAP	GA769	06-30-23
New Mexico	State	GA00006	06-30-23
New York	NELAP	10842	04-01-23
North Carolina (DW)	State	13701	07-31-23
North Carolina (WW/SW)	State	269	12-31-22
Pennsylvania	NELAP	68-00474	06-30-23
Puerto Rico	State	GA00006	01-01-23
South Carolina	State	98001	06-30-22 *
Tennessee	State	TN02961	06-30-23
Texas	NELAP	T1047004185-19-14	11-30-22
Texas	TCEQ Water Supply	T104704185	06-30-23
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-23
Wisconsin	State	999819810	08-31-23
Wyoming	State	8TMS-L	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Method	Method Description	Protocol	Laboratory
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET SAV
Moisture	Percent Moisture	EPA	EET SAV
DI Leach	Deionized Water Leaching Procedure	ASTM	EET SAV

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Chain of Custody Record

550316

eurofins | Environment TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-

Client Contact	Project Manager: William Schmidt	Site Contact: Sheila H.	Date:	COC No
Company Name: Ransom Consulting	Tel/Email: william schmidt @ ransom.env	Lab Contact:	Carrier:	1 of 1 COCs
Address: 2127 Hamilton Ave	Analysis Turnaround Time			Sampler:
City/State/Zip: Plain Hamilton, NJ 08619	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: (609) 584-0090	TAT if different from Below: STD			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: PES Refinery - Tank Group 07	☐ 1 week			
Site: PES Refinery	☐ 2 days			Job / SDG No:
PO#: 200 00135	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TEG	Sample Specific Notes
GPR794-01R-5501	10/21	1200	G	S				1	
GPR794-02R-5501		1210						1	
GPR794-03R-5501		1220						1	
GPR794-04R-5501		1230						1	
GPR794-05R-5501		1240						1	
GPR794-06R-5501		1250						1	
GPR794-07R-5501		1300						1	
GPR794-08R-5501		1310						1	

680-223928 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

__ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
SHIP TO SAVANNAH LAB TEMP 4.7 - 4.7

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by:	Company: Ransom Consulting	Date/Time: 10/24/22 1700	Received by:	Company: Impulse	Date/Time: 10/24/22 17:27
Relinquished by:	Company:	Date/Time:	Received by: Tyneshea Hamlett	Company:	Date/Time: 10/24/22 1730
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 10-25-22

3.5 | 3.5 289 A

Page 13 of 15

11/15/2022 (Rev. 1)

Login Sample Receipt Checklist

Client: Ransom Consulting LLC

Job Number: 680-223928-1

Login Number: 223928
List Number: 1
Creator: Harley, Tynisha

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Savannah

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the {0} Project Manager.

Authorization

Generated
11/15/2022 2:27:07 PM
Revision 1

Authorized for release by
Sheila Hoffman, Project Manager II
Sheila.Hoffman@et.eurofinsus.com
Designee for
Grace Chang, Project Manager II
Grace.Chang@et.eurofinsus.com
(732)593-2579

ANALYTICAL REPORT

Lab Number:	L2238159
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	07/25/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2238159-01	GPR799-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:30	07/18/22
L2238159-02	GPR799-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:40	07/18/22
L2238159-03	GPR799-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:50	07/18/22
L2238159-04	GPR799-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:00	07/18/22
L2238159-05	GPR799-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:10	07/18/22
L2238159-06	GPR799-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:20	07/18/22
L2238159-07	GPR799-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:30	07/18/22
L2238159-08	GPR798-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:40	07/18/22
L2238159-09	GPR798-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:50	07/18/22
L2238159-10	GPR798-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:00	07/18/22
L2238159-11	GPR798-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:10	07/18/22
L2238159-12	GPR798-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:20	07/18/22
L2238159-13	GPR798-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:30	07/18/22
L2238159-14	GPR798-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:40	07/18/22
L2238159-15	FB-071822-01	WATER	PHILADELPHIA, PA	07/18/22 14:00	07/18/22
L2238159-16	FB-071822-02	WATER	PHILADELPHIA, PA	07/18/22 14:10	07/18/22
L2238159-17	DUP-47	SOIL	PHILADELPHIA, PA	07/18/22 00:00	07/18/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative (continued)

Report Revision

July 25, 2022: The Client IDs were amended on L2238159-01 through -14.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2238159-01D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (131%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (156%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-03D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (65%) due to interference with the Internal Standard.

L2238159-07D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (166%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-08D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (136%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (232%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-09: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (68%) due to interference with the Internal Standard.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative (continued)

L2238159-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (216%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-11D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (63%) due to interference with the Internal Standard.
L2238159-12: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (249%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-13D: The surrogate recovery is outside the acceptance criteria for toluene-d8 (146%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-13D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (46%) due to interference with the Internal Standard.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 07/25/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-01 D
Client ID: GPR799-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 00:07
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.2		mg/kg	0.27	0.089	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	**131**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-02
Client ID: GPR799-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 18:24
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.6		mg/kg	0.056	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**156**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-03 D
Client ID: GPR799-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:50
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:00
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	16.		mg/kg	0.45	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	**65**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-04 D
Client ID: GPR799-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:41
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	22.		mg/kg	0.22	0.073	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-05
Client ID: GPR799-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 19:17
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.7		mg/kg	0.046	0.015	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-06
Client ID: GPR799-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 19:44
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.3		mg/kg	0.052	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-07 D
Client ID: GPR799-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 22:49
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.71		mg/kg	0.10	0.034	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**166**	Q	70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-08 D
Client ID: GPR798-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:15
Analyst: JC
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	3.4		mg/kg	0.094	0.031	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	86		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-09
Client ID: GPR798-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:50
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 20:11
Analyst: JC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	6.2		mg/kg	0.12	0.040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**232**	Q	70-130
Dibromofluoromethane	**68**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-10
Client ID: GPR798-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 20:37
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.40		mg/kg	0.069	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**216**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-11 D
Client ID: GPR798-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:26
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	14.		mg/kg	0.43	0.14	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	**63**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-12
Client ID: GPR798-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 21:30
Analyst: JC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.4		mg/kg	0.052	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	**249**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-13 D
Client ID: GPR798-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:53
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.2		mg/kg	0.13	0.043	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	**146**	Q	70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	**46**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-14 D
Client ID: GPR798-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 22:23
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7.8		mg/kg	0.10	0.035	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-15
Client ID: FB-071822-01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:01
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-16
Client ID: FB-071822-02
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:25
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-17 D
Client ID: DUP-47
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 00:33
Analyst: JC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	5900		mg/kg	58	19.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 16:38
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02,04-10,12,14,17 Batch: WG1665199-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:29
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 15-16 Batch: WG1665431-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:50
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 03,11,13 Batch: WG1665578-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02,04-10,12,14,17 Batch: WG1665199-3 WG1665199-4								
Benzene	77		80		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	98		97		70-130
Dibromofluoromethane	102		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 15-16 Batch: WG1665431-3 WG1665431-4								
Benzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	98		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 03,11,13 Batch: WG1665578-3 WG1665578-4								
Benzene	88		84		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	76		75		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	78		77		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-01
Client ID: GPR799-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 09:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.0		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-02
Client ID: GPR799-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 09:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-03
Client ID: GPR799-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 09:50
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.8		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-04
Client ID: GPR799-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.3		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-05
Client ID: GPR799-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:10
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.7		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-06
Client ID: GPR799-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:20
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-07
Client ID: GPR799-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-08
Client ID: GPR798-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-09
Client ID: GPR798-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:50
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-10
Client ID: GPR798-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-11
Client ID: GPR798-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:10
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-12
Client ID: GPR798-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:20
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.4		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-13
Client ID: GPR798-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-14
Client ID: GPR798-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-17
Client ID: DUP-47
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-14,17 QC Batch ID: WG1664527-1 QC Sample: L2238159-01 Client ID: GPR799-01-SS01						
Solids, Total	88.0	87.2	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-01A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-01B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-01C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-01D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-02A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-02B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-02C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-02D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-03A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-03B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-03C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-03D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-04A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-04B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-04C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-04D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-05A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-05B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-05C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-05D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-06A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-06B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-06C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-06D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-07A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-07B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-07C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-07D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-08A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-08B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-08C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-08D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-09A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-09B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-09C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-09D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-10A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-10B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-10C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-10D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-11A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-11B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-11C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-11D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-12A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-12B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-12C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-12D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-13A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-13B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-13C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-13D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-14A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-14B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-14C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-14D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-15A	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-15B	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-15C	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16A	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16B	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16C	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-17A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-17B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-17C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-17D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238159

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments
38159-01	GPR-799-01-SS01	7/18/22	930	S	ar	☑	
-02	GPR-799-02-SS01		940			☑	
-03	GPR-799-03-SS01		950			☑	
-04	GPR-799-04-SS01		1000			☑	
-05	GPR-799-05-SS01		1010			☑	
-06	GPR-799-06-SS01		1020			☑	
-07	GPR-799-07-SS01		1030			☑	
-08	GPR-798-01-SS01		1040			☑	
-09	GPR-798-02-SS01		1050			☑	
-10	GPR-798-03-SS01		1100			☑	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18/22 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 1800
	7/18/22 2100		7/18/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(A)(I)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238159

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ ADEx

Data Deliverables

☒ EMAIL ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene												Sample Specific Comments
38159-11	GPR-798-04-5501	7/18/22	1110	S	AM	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-12	GPR-798-05-5501		1120			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-13	GPR-798-06-5501		1130			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-14	GPR-798-07-5501		1140			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-15	FB-071822-01		1400	W		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-16	FB-071822-02		1410			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-17	DUP-47		—	S		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Container Type						-	-	G	-	-	-	-	-	-	-	-	-	
Preservative						-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18/22 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 2300
	7/18/22 2100		7/19/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(A)(I)
(rev. 5-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

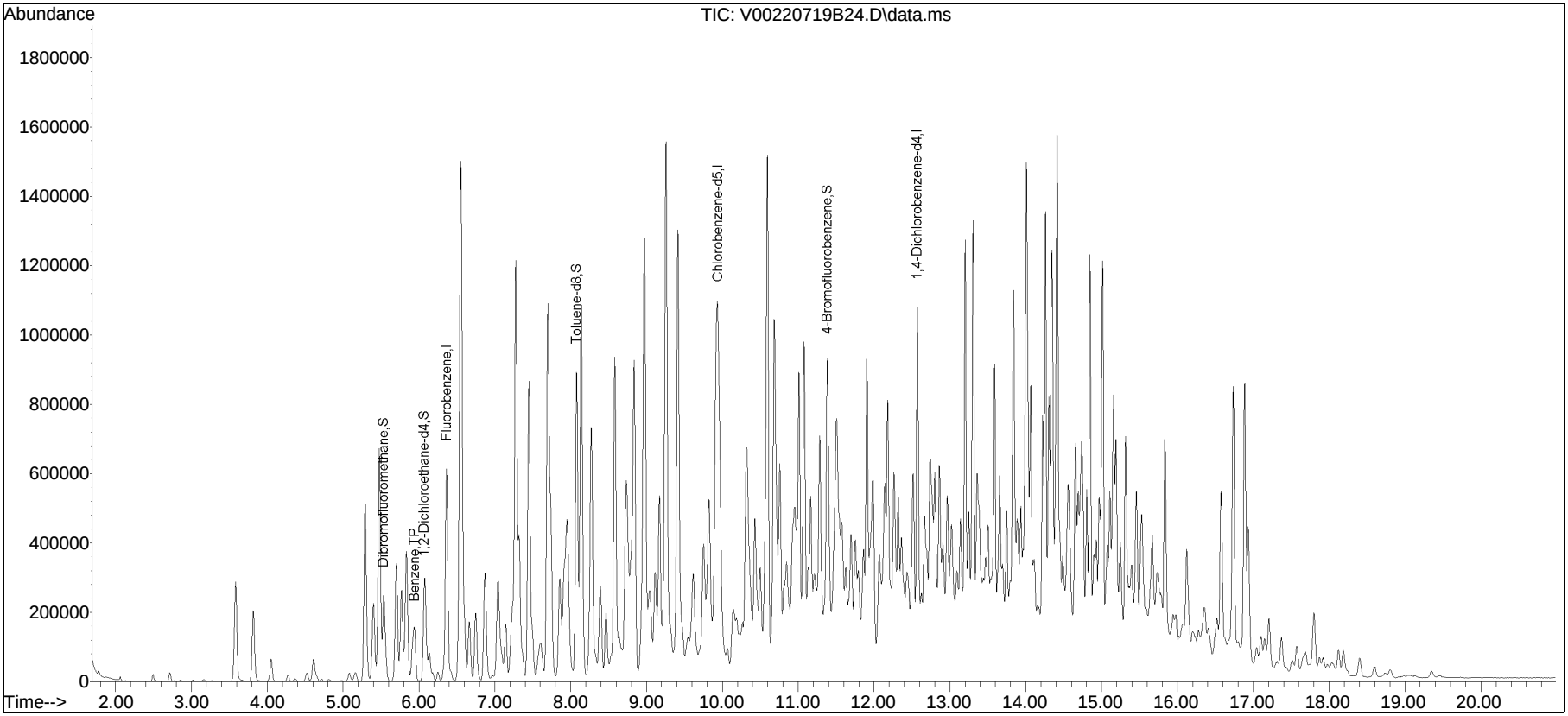
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B24.D
Acq On : 20 Jul 2022 12:07 am
Operator : VOA100:JC
Sample : l2238159-01d,31h,5.67,10,0.02,,a
Misc : WG1665199,ICAL19178
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 20 06:14:53 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

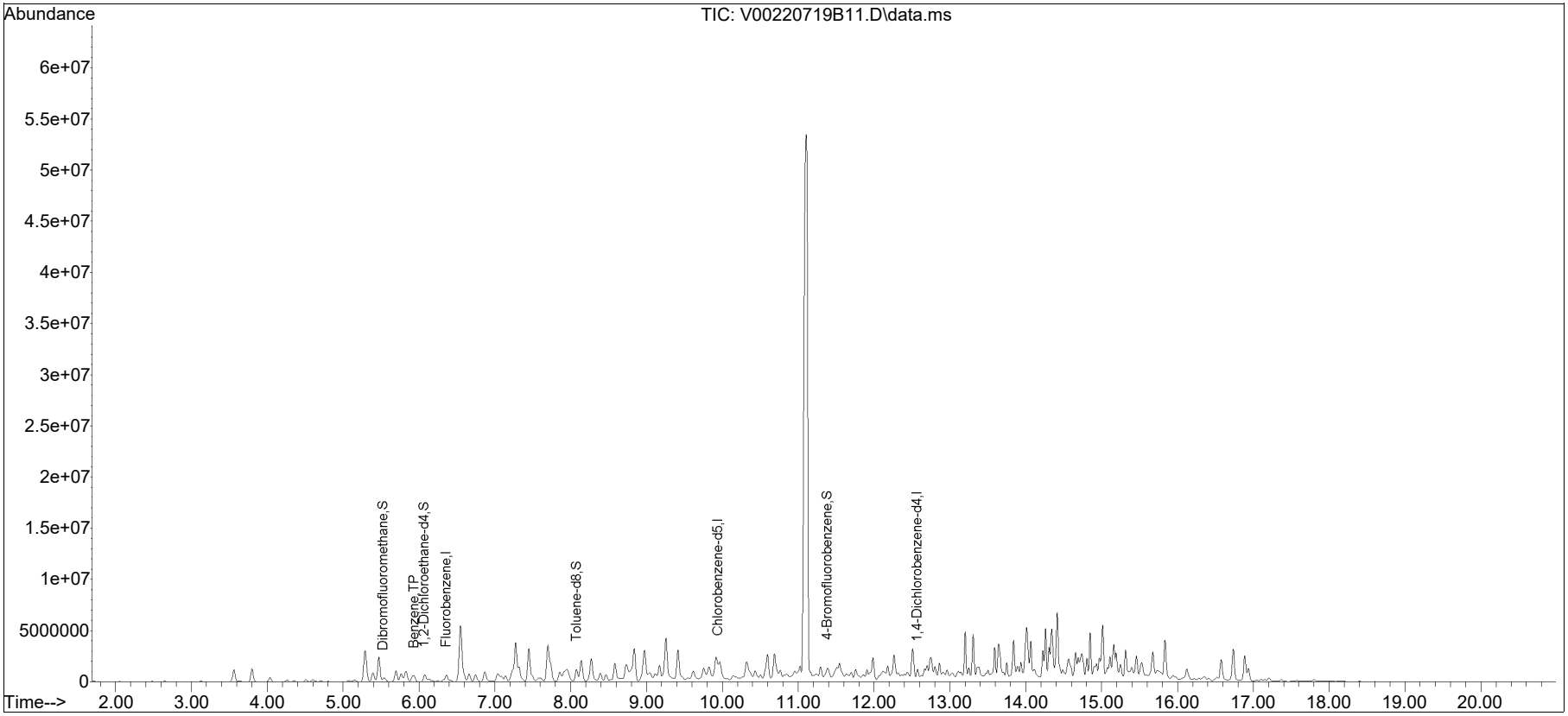


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B11.D
Acq On : 19 Jul 2022 6:24 pm
Operator : VOA100:JC
Sample : l2238159-02,31h,6.21,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 20 06:14:01 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

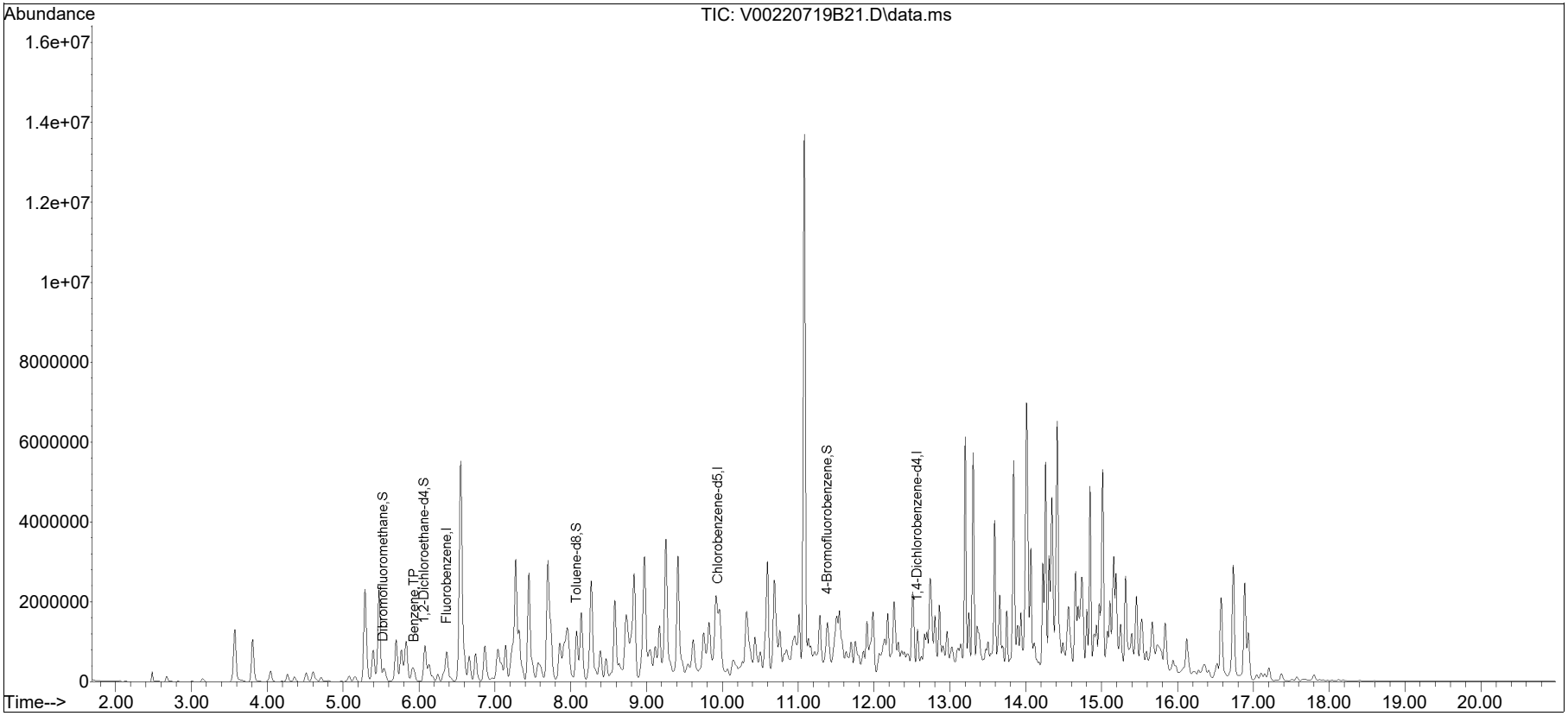


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B21.D
Acq On : 19 Jul 2022 10:49 pm
Operator : VOA100:JC
Sample : l2238159-07d,31h,6.23,10,0.05,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 20 06:14:41 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

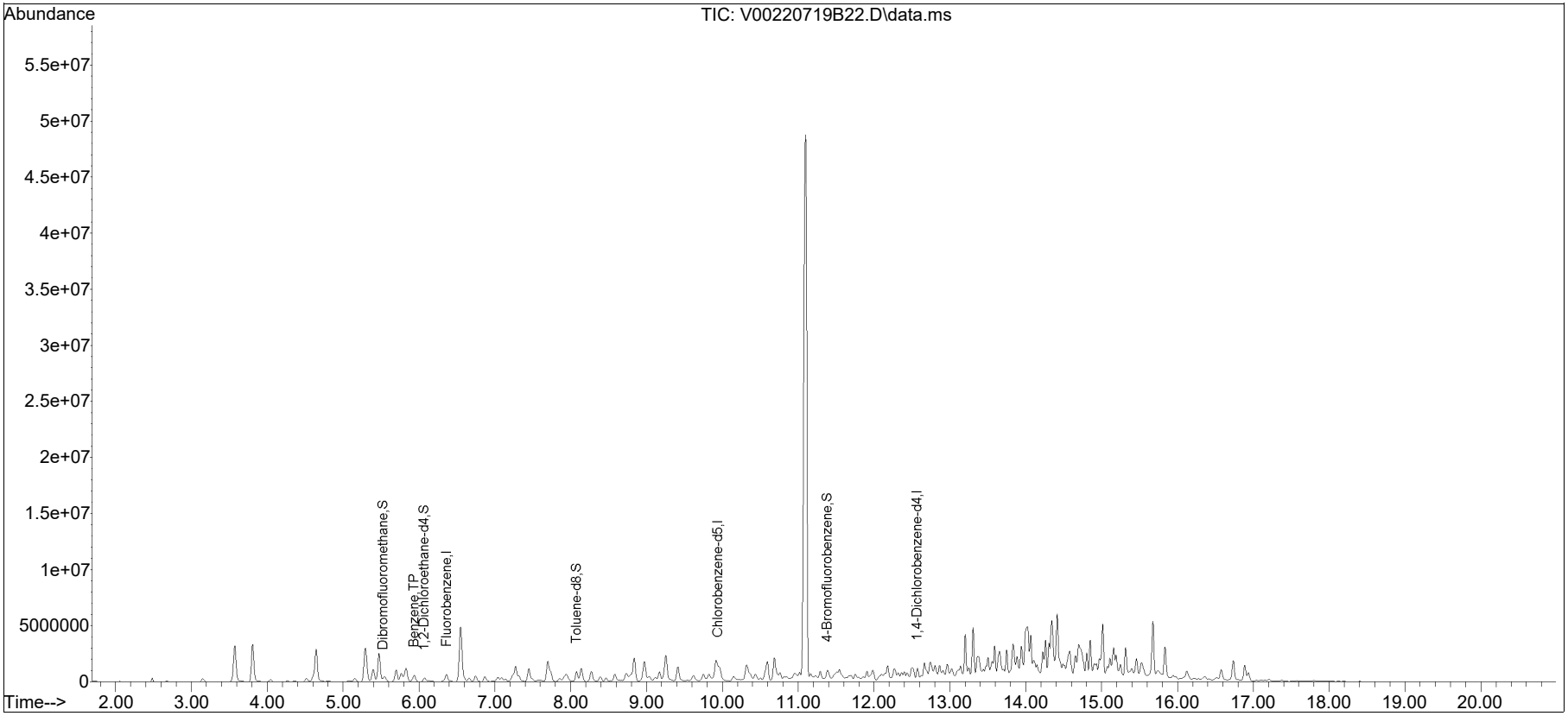


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B22.D
Acq On : 19 Jul 2022 11:15 pm
Operator : VOA100:JC
Sample : l2238159-08d,31h,5.93,10,0.05,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 20 06:14:45 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

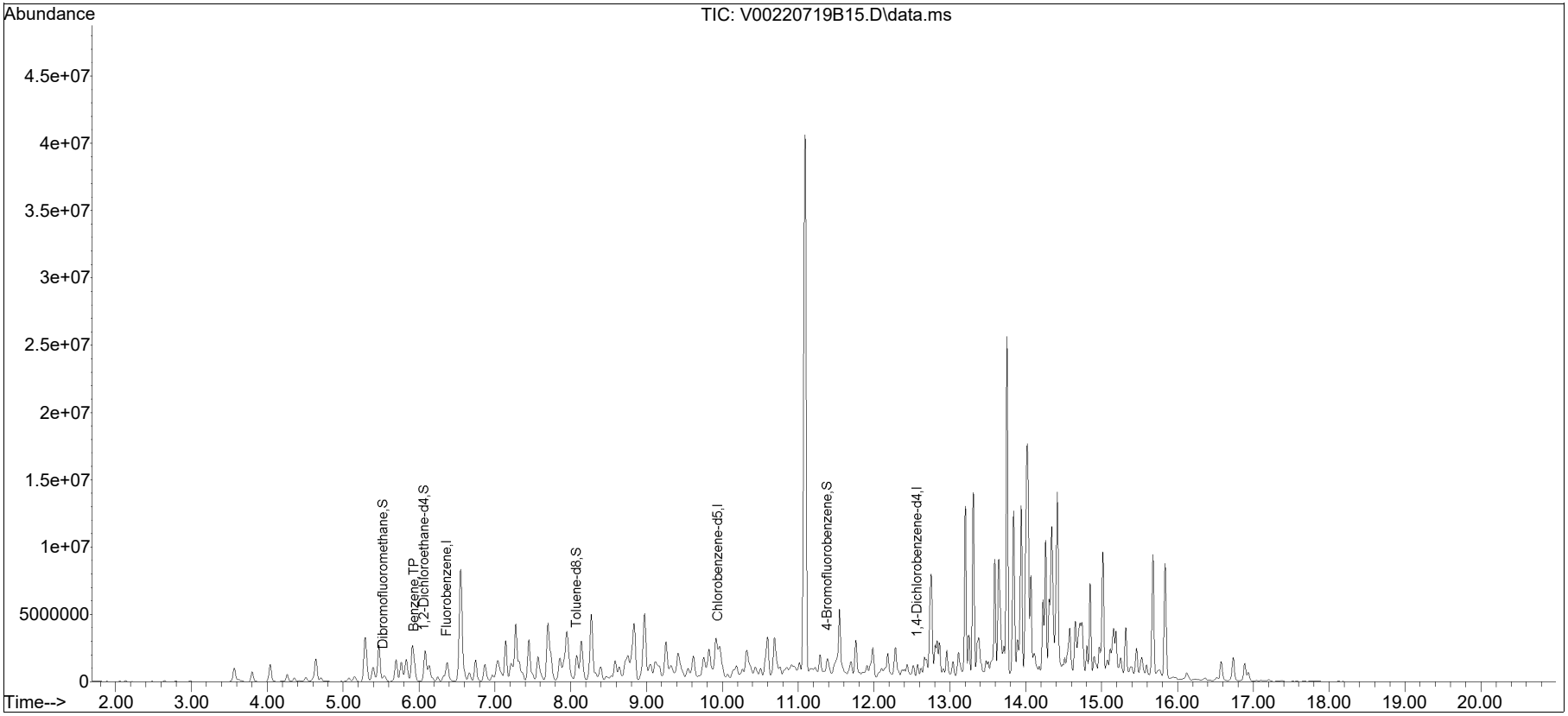


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B15.D
Acq On : 19 Jul 2022 8:11 pm
Operator : VOA100:JC
Sample : l2238159-09,31h,2.99,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 20 06:14:17 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

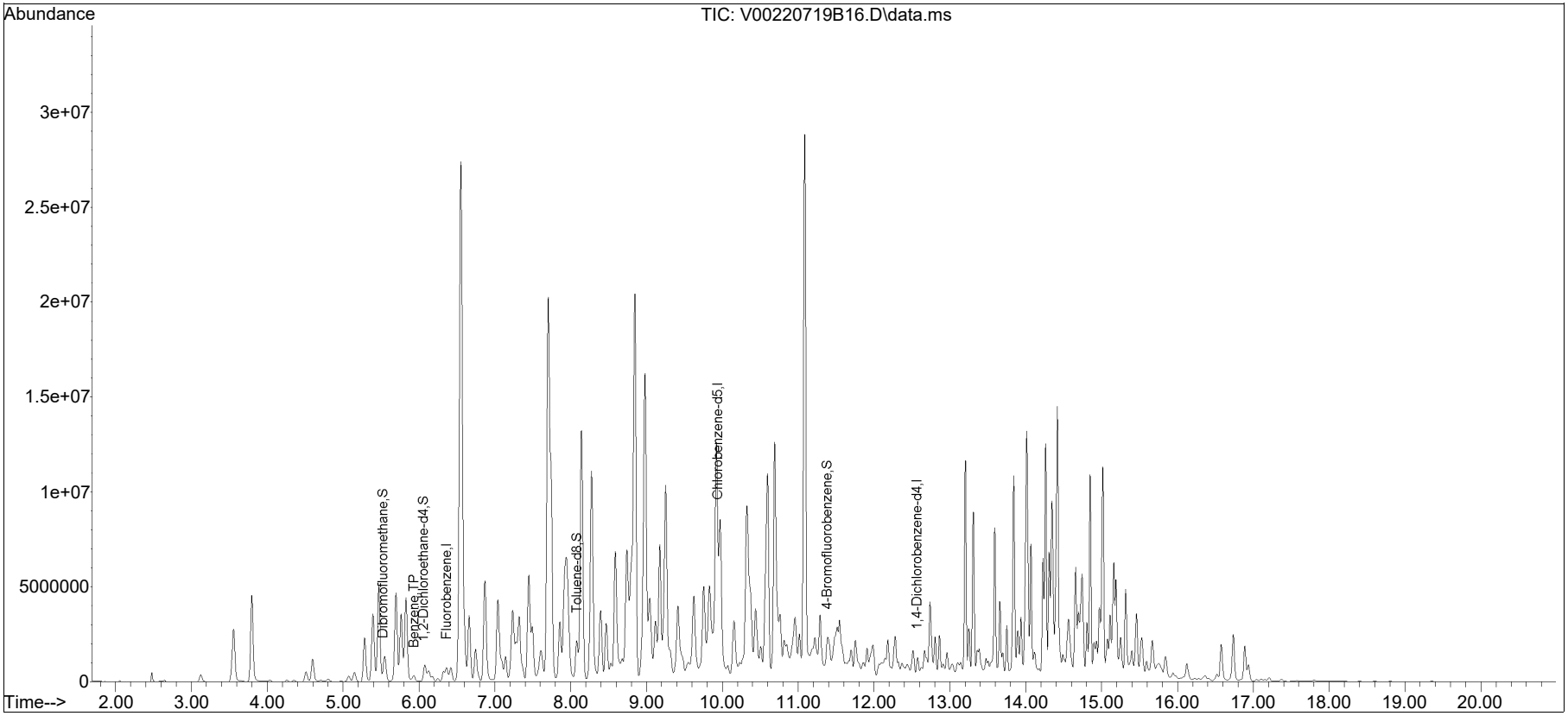


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B16.D
Acq On : 19 Jul 2022 8:37 pm
Operator : VOA100:JC
Sample : l2238159-10,31h,6.08,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 20 06:14:21 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

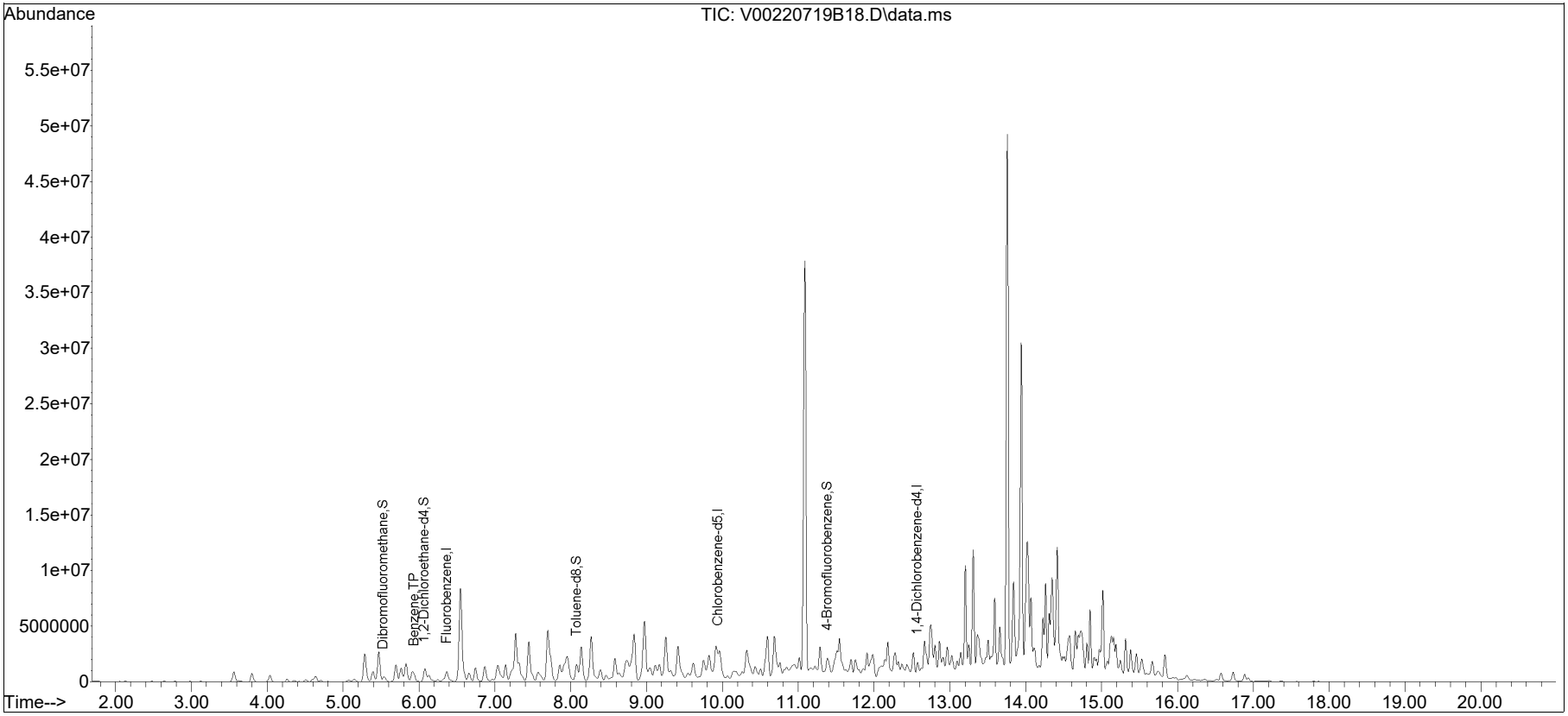


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B18.D
Acq On : 19 Jul 2022 9:30 pm
Operator : VOA100:JC
Sample : l2238159-12,31h,6.50,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 20 06:14:29 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

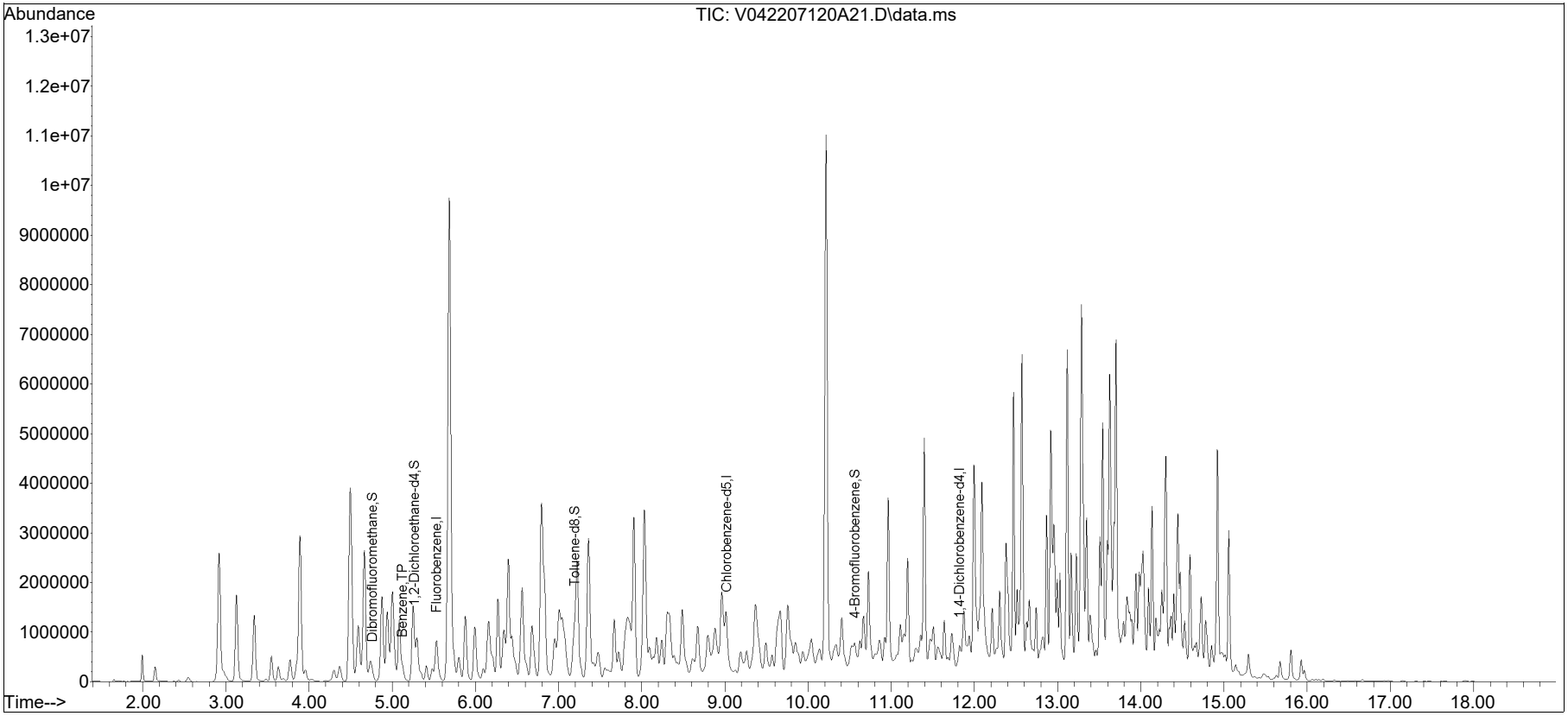


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA104\2022\2207120A\
Data File : V042207120A21.D
Acq On : 20 Jul 2022 3:53 pm
Operator : VOA104:JC
Sample : L2238159-13D,31H,5.73,10,0.050,,A
Misc : WG1665578,ICAL19119
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 21 06:56:55 2022
Quant Method : I:\VOLATILES\VOA104\2022\2207120A\V104_220621A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed Jun 22 06:56:43 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\2207120A\V042207120A01.D•



ANALYTICAL REPORT

Lab Number:	L2238160
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	07/25/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2238160-01	GPR1117-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:00	07/18/22
L2238160-02	GPR1117-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:30	07/18/22
L2238160-03	GPR1117-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:00	07/18/22
L2238160-04	GPR1117-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:15	07/18/22
L2238160-05	GPR1117-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:30	07/18/22
L2238160-06	GPR1117-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:45	07/18/22
L2238160-07	GPR1117-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:00	07/18/22
L2238160-08	GPR1117-08-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:15	07/18/22
L2238160-09	GPR1116-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:30	07/18/22
L2238160-10	GPR1116-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 13:00	07/18/22
L2238160-11	GPR1116-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 13:30	07/18/22
L2238160-12	GPR1116-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 14:00	07/18/22
L2238160-13	FB-071822-3	WATER	PHILADELPHIA, PA	07/18/22 14:10	07/18/22
L2238160-14	FB-071822-4	WATER	PHILADELPHIA, PA	07/18/22 14:20	07/18/22
L2238160-15	TB-071822	WATER	PHILADELPHIA, PA	07/18/22 00:00	07/18/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2238160
Project Number: 200.00135.006 **Report Date:** 07/25/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2238160-15: A sample identified as "TB-071822" was listed on the Chain of Custody, but not received. This was verified by the client.

Volatile Organics

L2238160-04D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

L2238160-04D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (216%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (1300%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (194%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (318%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Total Metals

L2238160-01-03: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 07/25/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 02:08
Analyst: JC
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	0.0014	J	mg/kg	0.0017	0.00051	1
Xylenes, Total	0.0014	J	mg/kg	0.0017	0.00051	1
Isopropylbenzene	0.0055		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.0016	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.0023	J	mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 02:36
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	ND		mg/kg	0.0017	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00049	1
Ethylbenzene	ND		mg/kg	0.0017	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	0.00098	J	mg/kg	0.0017	0.00048	1
Xylenes, Total	0.00098	J	mg/kg	0.0017	0.00048	1
Isopropylbenzene	0.0010	J	mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0015	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0017	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 03:04
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00029	1
Benzene	0.00024	J	mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00048	J	mg/kg	0.0014	0.00042	1
Xylenes, Total	0.00048	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.00049	J	mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00028	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0028	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04 D
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 07:19
Analyst: JC
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.1	0.11	2
Benzene	0.11	J	mg/kg	0.28	0.093	2
1,2-Dichloroethane	ND		mg/kg	0.56	0.14	2
Toluene	0.34	J	mg/kg	0.56	0.30	2
1,2-Dibromoethane	ND		mg/kg	0.28	0.16	2
Ethylbenzene	0.23	J	mg/kg	0.56	0.079	2
p/m-Xylene	0.92	J	mg/kg	1.1	0.31	2
o-Xylene	0.20	J	mg/kg	0.56	0.16	2
Xylenes, Total	1.1	J	mg/kg	0.56	0.16	2
Isopropylbenzene	3.7		mg/kg	0.56	0.061	2
1,3,5-Trimethylbenzene	0.41	J	mg/kg	1.1	0.11	2
1,2,4-Trimethylbenzene	1.3		mg/kg	1.1	0.19	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**216**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 03:33
Analyst: JC
Percent Solids: 44%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00045	1
Benzene	0.0011		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00064	1
Xylenes, Total	ND		mg/kg	0.0022	0.00064	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:01
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	0.0012		mg/kg	0.00094	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	0.0020		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00094	0.00055	1
Ethylbenzene	ND		mg/kg	0.0019	0.00026	1
p/m-Xylene	0.0036	J	mg/kg	0.0038	0.0010	1
o-Xylene	0.0012	J	mg/kg	0.0019	0.00055	1
Xylenes, Total	0.0048	J	mg/kg	0.0019	0.00055	1
Isopropylbenzene	0.0012	J	mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	0.0025	J	mg/kg	0.0038	0.00036	1
1,2,4-Trimethylbenzene	0.0090		mg/kg	0.0038	0.00063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**1300**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:29
Analyst: JC
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00039	1
Benzene	0.00049	J	mg/kg	0.00097	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00050	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00097	0.00057	1
Ethylbenzene	ND		mg/kg	0.0019	0.00027	1
p/m-Xylene	ND		mg/kg	0.0039	0.0011	1
o-Xylene	ND		mg/kg	0.0019	0.00056	1
Xylenes, Total	ND		mg/kg	0.0019	0.00056	1
Isopropylbenzene	ND		mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0039	0.00037	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0039	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:57
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0054		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00066	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.00028	J	mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 05:54
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.00081	J	mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.0012	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	0.030		mg/kg	0.0029	0.00082	1
o-Xylene	0.012		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.042		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.028		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.016		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.026		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	123		70-130
4-Bromofluorobenzene	**194**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 06:22
Analyst: JC
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.017		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	0.020		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	0.0031		mg/kg	0.0018	0.00026	1
p/m-Xylene	0.016		mg/kg	0.0037	0.0010	1
o-Xylene	0.0055		mg/kg	0.0018	0.00054	1
Xylenes, Total	0.022		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.0091		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.00097	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.029		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 06:51
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	0.0012		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	0.00080	J	mg/kg	0.0014	0.00078	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	0.00040	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	0.00085	J	mg/kg	0.0029	0.00080	1
o-Xylene	0.0031		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.0040	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.015		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	0.00056	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0095		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**318**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 05:25
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00024	1
Benzene	0.00056	J	mg/kg	0.00059	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0017		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00034	1
Ethylbenzene	0.0010	J	mg/kg	0.0012	0.00016	1
p/m-Xylene	0.0082		mg/kg	0.0023	0.00066	1
o-Xylene	0.0068		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.015		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.024		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0089		mg/kg	0.0023	0.00023	1
1,2,4-Trimethylbenzene	0.022		mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 13:13
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-15
Client ID: TB-071822
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:30
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 07/20/22 14:35
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 13-15 Batch: WG1664686-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:46
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,05-12 Batch: WG1665206-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:46
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1665207-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:29
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-14 Batch: WG1665431-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 13-15 Batch: WG1664686-2								
1,2-Dibromoethane	93		-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,05-12 Batch: WG1665206-3 WG1665206-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	107		106		70-130	1		30
1,2-Dichloroethane	98		98		70-130	0		30
Toluene	105		105		70-130	0		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	104		104		70-130	0		30
p/m-Xylene	105		105		70-130	0		30
o-Xylene	105		104		70-130	1		30
Isopropylbenzene	108		108		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		105		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	106		105		70-130
Dibromofluoromethane	91		91		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1665207-3 WG1665207-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	107		106		70-130	1		30
1,2-Dichloroethane	98		98		70-130	0		30
Toluene	105		105		70-130	0		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	104		104		70-130	0		30
p/m-Xylene	105		105		70-130	0		30
o-Xylene	105		104		70-130	1		30
Isopropylbenzene	108		108		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		105		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	106		104		70-130
Dibromofluoromethane	91		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-14 Batch: WG1665431-3 WG1665431-4								
Methyl tert butyl ether	100		110		63-130	10		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	98		95		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 06:49
Analyst: SLR
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.28	0.034	1
Fluorene	0.26	J	mg/kg	0.28	0.027	1
Phenanthrene	0.86		mg/kg	0.17	0.034	1
Anthracene	0.22		mg/kg	0.17	0.054	1
Pyrene	1.2		mg/kg	0.17	0.028	1
Benzo(a)anthracene	0.72		mg/kg	0.17	0.031	1
Chrysene	0.79		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	0.97		mg/kg	0.17	0.047	1
Benzo(a)pyrene	1.0		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	0.50		mg/kg	0.22	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	39		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 05:15
Analyst: SLR
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.24	0.030	1
Fluorene	0.27		mg/kg	0.24	0.024	1
Phenanthrene	0.80		mg/kg	0.14	0.029	1
Anthracene	0.29		mg/kg	0.14	0.047	1
Pyrene	1.5		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.76		mg/kg	0.14	0.027	1
Chrysene	0.88		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.041	1
Benzo(a)pyrene	1.1		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.58		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 03:18
Analyst: SLR
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.3		mg/kg	0.24	0.029	1
Fluorene	2.7		mg/kg	0.24	0.023	1
Phenanthrene	8.9		mg/kg	0.14	0.029	1
Anthracene	1.4		mg/kg	0.14	0.046	1
Pyrene	3.2		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.88		mg/kg	0.14	0.027	1
Chrysene	1.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.79		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.84		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.41		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	54		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 07:35
Analyst: SLR
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.20	0.025	1
Fluorene	1.0		mg/kg	0.20	0.020	1
Phenanthrene	3.5		mg/kg	0.12	0.025	1
Anthracene	0.96		mg/kg	0.12	0.040	1
Pyrene	4.8		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.9		mg/kg	0.12	0.023	1
Chrysene	2.8		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	3.4		mg/kg	0.12	0.035	1
Benzo(a)pyrene	3.1		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	1.6		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**360**	Q	23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:28
Analyst: SLR
Percent Solids: 44%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32	J	mg/kg	0.37	0.045	1
Fluorene	0.19	J	mg/kg	0.37	0.036	1
Phenanthrene	1.2		mg/kg	0.22	0.045	1
Anthracene	0.54		mg/kg	0.22	0.072	1
Pyrene	1.1		mg/kg	0.22	0.037	1
Benzo(a)anthracene	0.67		mg/kg	0.22	0.042	1
Chrysene	0.66		mg/kg	0.22	0.039	1
Benzo(b)fluoranthene	0.75		mg/kg	0.22	0.062	1
Benzo(a)pyrene	0.64		mg/kg	0.30	0.091	1
Benzo(ghi)perylene	0.36		mg/kg	0.30	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:52
Analyst: SLR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.24	0.029	1
Fluorene	0.12	J	mg/kg	0.24	0.023	1
Phenanthrene	0.52		mg/kg	0.14	0.029	1
Anthracene	0.22		mg/kg	0.14	0.047	1
Pyrene	0.76		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.53		mg/kg	0.14	0.027	1
Chrysene	0.74		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.76		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.72		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.49		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	48		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 06:02
Analyst: SLR
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.45		mg/kg	0.28	0.034	1
Fluorene	0.11	J	mg/kg	0.28	0.027	1
Phenanthrene	0.39		mg/kg	0.17	0.034	1
Anthracene	0.098	J	mg/kg	0.17	0.054	1
Pyrene	0.39		mg/kg	0.17	0.028	1
Benzo(a)anthracene	0.26		mg/kg	0.17	0.031	1
Chrysene	0.27		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	0.36		mg/kg	0.17	0.047	1
Benzo(a)pyrene	0.30		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	0.20	J	mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	30		30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 08:23
Analyst: SLR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.14	J	mg/kg	0.21	0.026	1
Fluorene	0.12	J	mg/kg	0.21	0.021	1
Phenanthrene	1.1		mg/kg	0.13	0.026	1
Anthracene	0.30		mg/kg	0.13	0.042	1
Pyrene	1.0		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.59		mg/kg	0.13	0.024	1
Chrysene	0.58		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.61		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.54		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.26		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	31		30-120
4-Terphenyl-d14	31		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 03:41
Analyst: SLR
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.94		mg/kg	0.24	0.030	1
Fluorene	0.11	J	mg/kg	0.24	0.024	1
Phenanthrene	0.32		mg/kg	0.15	0.030	1
Anthracene	0.14	J	mg/kg	0.15	0.048	1
Pyrene	0.49		mg/kg	0.15	0.024	1
Benzo(a)anthracene	0.38		mg/kg	0.15	0.027	1
Chrysene	0.42		mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	0.57		mg/kg	0.15	0.041	1
Benzo(a)pyrene	0.58		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	0.33		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	**28**	Q	30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:05
Analyst: SLR
Percent Solids: 54%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.30	0.037	1
Fluorene	0.35		mg/kg	0.30	0.030	1
Phenanthrene	0.94		mg/kg	0.18	0.037	1
Anthracene	0.34		mg/kg	0.18	0.059	1
Pyrene	1.2		mg/kg	0.18	0.030	1
Benzo(a)anthracene	0.81		mg/kg	0.18	0.034	1
Chrysene	0.92		mg/kg	0.18	0.032	1
Benzo(b)fluoranthene	1.1		mg/kg	0.18	0.051	1
Benzo(a)pyrene	1.2		mg/kg	0.24	0.074	1
Benzo(ghi)perylene	0.54		mg/kg	0.24	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	**29**	Q	30-120
4-Terphenyl-d14	26		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 10:21
Analyst: SLR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.52		mg/kg	0.24	0.029	1
Fluorene	0.75		mg/kg	0.24	0.023	1
Phenanthrene	1.5		mg/kg	0.14	0.029	1
Anthracene	0.30		mg/kg	0.14	0.046	1
Pyrene	0.68		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.39		mg/kg	0.14	0.026	1
Chrysene	0.77		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.49		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.42		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.22		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	**29**	Q	30-120
4-Terphenyl-d14	28		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 18:55
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.20	0.024	1
Fluorene	0.16	J	mg/kg	0.20	0.019	1
Phenanthrene	0.52		mg/kg	0.12	0.024	1
Anthracene	0.28		mg/kg	0.12	0.038	1
Pyrene	0.54		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.49		mg/kg	0.12	0.022	1
Chrysene	0.52		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.67		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.66		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.52		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	34		23-120
2-Fluorobiphenyl	36		30-120
4-Terphenyl-d14	30		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 11:19
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	36		23-120
2-Fluorobiphenyl	38		15-120
4-Terphenyl-d14	**38**	Q	41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 11:35
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	40		15-120
4-Terphenyl-d14	**39**	Q	41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/22 23:24
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1664828-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.019
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	112		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 10:15
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-14 Batch: WG1665023-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	33		23-120
2-Fluorobiphenyl	35		15-120
4-Terphenyl-d14	**34**	Q	41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1664828-2 WG1664828-3								
Naphthalene	51		63		40-140	21		50
Fluorene	50		64		40-140	25		50
Phenanthrene	50		63		40-140	23		50
Anthracene	51		66		40-140	26		50
Pyrene	49		63		35-142	25		50
Benzo(a)anthracene	50		64		40-140	25		50
Chrysene	51		64		40-140	23		50
Benzo(b)fluoranthene	48		63		40-140	27		50
Benzo(a)pyrene	50		65		40-140	26		50
Benzo(ghi)perylene	46		60		40-140	26		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80		102		23-120
2-Fluorobiphenyl	46		57		30-120
4-Terphenyl-d14	47		60		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-14 Batch: WG1665023-2 WG1665023-3								
Naphthalene	73		65		40-140	12		40
Fluorene	71		65		40-140	9		40
Phenanthrene	73		67		40-140	9		40
Anthracene	71		66		40-140	7		40
Pyrene	68		65		26-127	5		40
Benzo(a)anthracene	70		65		40-140	7		40
Chrysene	74		69		40-140	7		40
Benzo(b)fluoranthene	74		70		40-140	6		40
Benzo(a)pyrene	73		69		40-140	6		40
Benzo(ghi)perylene	82		82		40-140	0		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	36		32		23-120
2-Fluorobiphenyl	37		33		15-120
4-Terphenyl-d14	**36**	Q	**35**	Q	41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	157		mg/kg	6.55	0.351	2	07/19/22 09:10	07/20/22 16:06	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	125		mg/kg	5.59	0.300	2	07/19/22 09:10	07/20/22 16:11	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	133		mg/kg	5.80	0.311	2	07/19/22 09:10	07/20/22 16:15	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.9		mg/kg	2.44	0.130	1	07/19/22 09:10	07/20/22 14:04	EPA 3050B	1,6010D	SB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 44%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	619		mg/kg	4.42	0.237	1	07/19/22 09:10	07/20/22 14:09	EPA 3050B	1,6010D	SB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	687		mg/kg	2.85	0.153	1	07/19/22 09:10	07/20/22 14:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	981		mg/kg	3.24	0.173	1	07/19/22 09:10	07/20/22 14:18	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.4		mg/kg	2.46	0.132	1	07/19/22 09:10	07/20/22 14:55	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.4		mg/kg	2.87	0.154	1	07/19/22 09:10	07/20/22 14:59	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	97.8		mg/kg	3.52	0.189	1	07/19/22 09:10	07/20/22 15:04	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1360		mg/kg	2.83	0.152	1	07/19/22 09:10	07/20/22 15:09	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.2		mg/kg	2.31	0.124	1	07/19/22 09:10	07/20/22 15:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 20:23	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 20:28	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-12 Batch: WG1664552-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	07/19/22 09:10	07/20/22 09:38	1,6010D	SB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 13-14 Batch: WG1664652-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 19:15	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 Batch: WG1664552-2 SRM Lot Number: D113-540								
Lead, Total	90		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 13-14 Batch: WG1664652-2								
Lead, Total	96		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1664552-3 QC Sample: L2238152-01 Client ID: MS Sample												
Lead, Total	16.8	45.6	41.9	**55**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1664652-3 WG1664652-4 QC Sample: L2238192-01 Client ID: MS Sample												
Lead, Total	10.88	530	549.9	102		505.6	93		75-125	8		20
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1664652-7 WG1664652-8 QC Sample: L2238192-03 Client ID: MS Sample												
Lead, Total	ND	530	506.0	95		507.2	96		75-125	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1664552-4 QC Sample: L2238152-01 Client ID: DUP Sample						
Lead, Total	16.8	12.3	mg/kg	**31**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.7		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.9		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	43.5		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.5		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.1		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.9		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.3		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1664529-1 QC Sample: L2238160-01 Client ID: GPR1117-01-SS01						
Solids, Total	58.7	62.1	%	6		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-01A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-01B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-01C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-01D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-01F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-02A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-02B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-02C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-02D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-02F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-03A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)
L2238160-03B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-03C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-03D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-03F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-04A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-04B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-04C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-04D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-04F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-05A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-05B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-05C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-05D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-05F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-06A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-06B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-06C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-06D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-06F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-07A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-07B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-07C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-07D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-07F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-08A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-08B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-08C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-08D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-08F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-09A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-09B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-09C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-09D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-09F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-10A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-10B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-10C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-10D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-10F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-11A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)
L2238160-11B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-11C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-11D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-11F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-12A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-12B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-12C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-12D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-12F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-13A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13D	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2238160-13E	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-13F	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		PB-6020T-PPB(180)
L2238160-13G	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-13H	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-14A	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14B	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14C	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14D	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-14E	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-14F	Plastic 250ml HNO3 preserved	B	<2	<2	4.9	Y	Absent		PB-6020T-PPB(180)
L2238160-14G	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-14H	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-15A	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-15B	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238160

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORTLIST 1-5

SAMPLE HANDLING

Filtration

☐ Done ☒ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
38160-01	GPR1117-01-5501	7/18	1000	TS ↔ S		
02	GPR1117-02-5501		1030			
03	GPR1117-03-5501		1100			
04	GPR1117-04-5501		1115			
05	GPR1117-05-5501		1130			
06	GPR1117-06-5501		1145			
07	GPR1117-07-5501		1200			
08	GPR1117-08-5501		1215			
09	GPR1116-01-5501		1230			
10	GPR1116-02-5501		1300			

Container Type: G

Preservative:

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 2100
	7/18/22 2100		7/18/22 2350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238160

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORTLIST 1-5 | VOC PORTION OF SCL 1-5 | EDB (8011)

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SHORTLIST 1-5	VOC PORTION OF SCL 1-5	EDB (8011)	Sample Specific Comments
38160-11	GPR1116-030501	7/18	1330	S	TS	☑	☐	☐	
12	GPR1116-040501		1400	S	TS	☑	☐	☐	
13	FB-071822-3		1410	W		☑	☐	☐	
14	FB-071822-4		1420	W		☑	☐	☐	
15	TB-071822		-	W		☐	☐	☐	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18 14:58		7/18/22 14:58
	7/18/22 18:00		7/18 1800
	7/18/22 21:00		7/18/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(rev.8)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

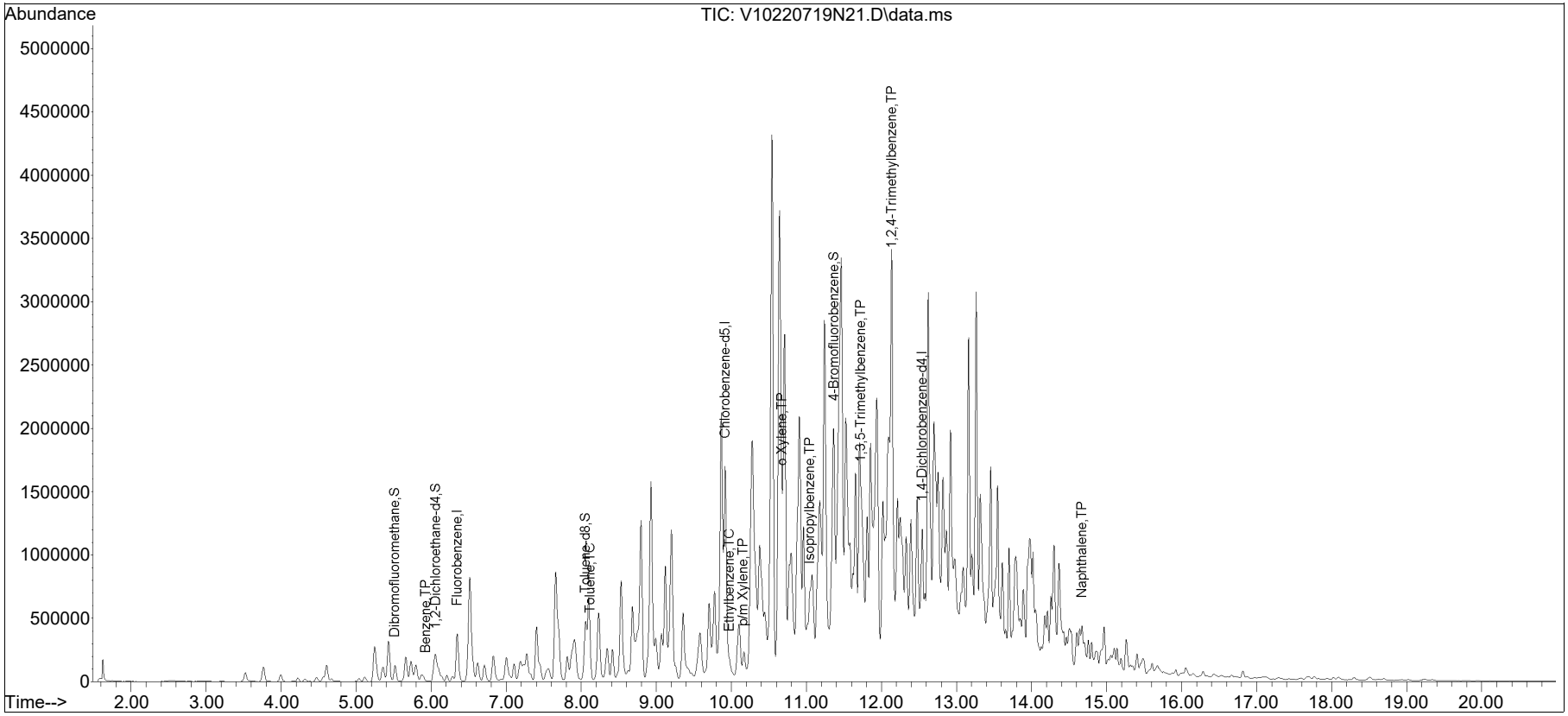
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N21.D
Acq On : 20 Jul 2022 7:19 am
Operator : VOA110:JC
Sample : l2238160-04d,31h,1.19,5,0.05,,a,r2f
Misc : WG1665207,ICAL18890
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 20 07:46:26 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\\V10220719N01.D•

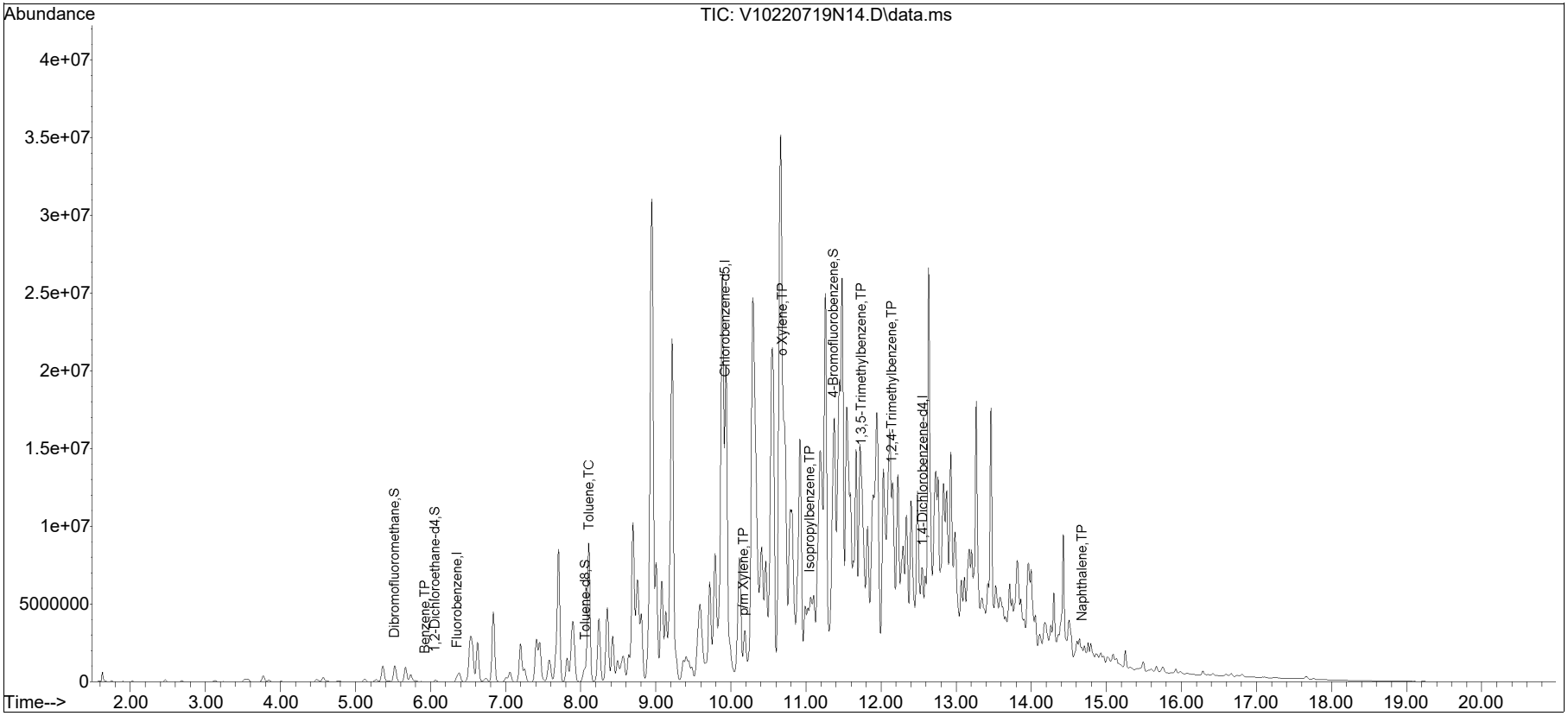


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N14.D
Acq On : 20 Jul 2022 4:01 am
Operator : VOA110:JC
Sample : l2238160-06,31,3.87,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 20 07:26:44 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\V10220719N02.D•



Quantitation Report (QT Reviewed)

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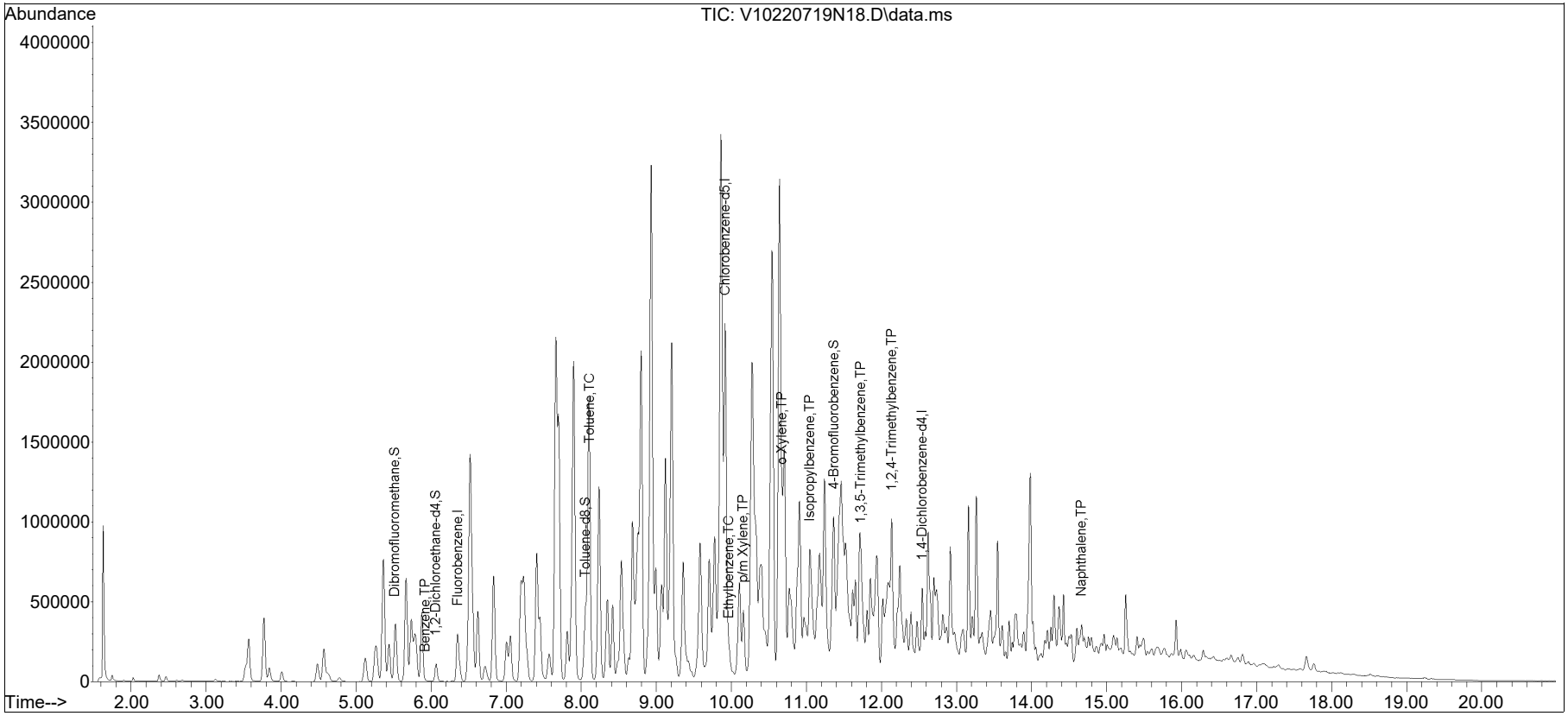
Data File : V10220719N18.D
Acq On : 20 Jul 2022 5:54 am
Operator : VOA110:JC
Sample : l2238160-09,31,5.06,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 20 06:17:13 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\\V10220719N02.D•

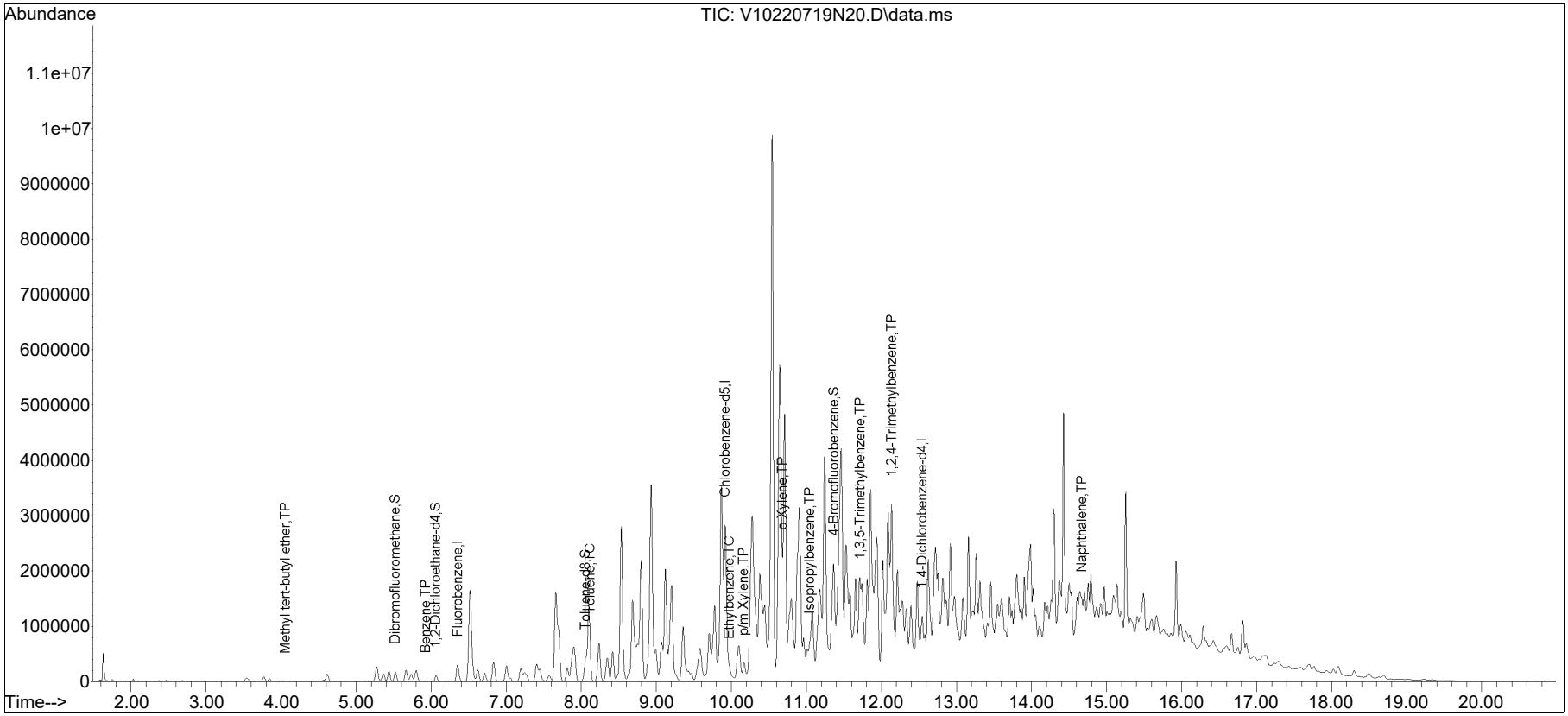


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N20.D
Acq On : 20 Jul 2022 6:51 am
Operator : VOA110:JC
Sample : l2238160-11,31,5.03,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 20 07:28:16 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\V10220719N01.D•



ANALYTICAL REPORT

Lab Number:	L2241030
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/05/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241030-01	GPR790-01-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:00	08/01/22
L2241030-02	GPR790-02-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:10	08/01/22
L2241030-03	GPR790-03-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:20	08/01/22
L2241030-04	GPR790-04-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:30	08/01/22
L2241030-05	GPR790-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:40	08/01/22
L2241030-06	GPR790-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:50	08/01/22
L2241030-07	GPR790-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:00	08/01/22
L2241030-08	GPR791-01-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:00	08/01/22
L2241030-09	GPR791-02-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:10	08/01/22
L2241030-10	GPR791-03-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:20	08/01/22
L2241030-11	GPR791-04-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:30	08/01/22
L2241030-12	GPR791-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:40	08/01/22
L2241030-13	GPR791-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:50	08/01/22
L2241030-14	GPR791-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 14:00	08/01/22
L2241030-15	GPR791-08-SS01	SOIL	PHILADELPHIA, PA	08/01/22 14:10	08/01/22
L2241030-16	FB-080122-1	WATER	PHILADELPHIA, PA	08/01/22 14:30	08/01/22
L2241030-17	FB-080122-2	WATER	PHILADELPHIA, PA	08/01/22 14:40	08/01/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2241030-06: The collection date and time on the chain of custody was 01-AUG-22 11:50; however, the collection date/time on the container label was 01-AUG-22 17:50. At the client's request, the collection date/time is reported as 01-AUG-22 11:50.

L2241030-07: The collection date and time on the chain of custody was 01-AUG-22 12:00; however, the collection date/time on the container label was 01-AUG-22 12:30. At the client's request, the collection date/time is reported as 01-AUG-22 12:00.

L2241030-14: The collection date and time on the chain of custody was 01-AUG-22 14:00; however, the collection date/time on the container label was 01-AUG-22 14:50. At the client's request, the collection date/time is reported as 01-AUG-22 14:00.

Volatile Organics

L2241030-04D and -09D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/05/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-01 D
Client ID: GPR790-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:07
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	520		mg/kg	3.4	1.1	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-02 D
Client ID: GPR790-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:27
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	130		mg/kg	0.30	0.10	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-03 D
Client ID: GPR790-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:46
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.8		mg/kg	0.26	0.086	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-04 D
Client ID: GPR790-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:06
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.20	J	mg/kg	0.59	0.20	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-05 D
Client ID: GPR790-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:26
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	3000		mg/kg	26	8.6	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-06 D
Client ID: GPR790-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:45
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	4.6		mg/kg	0.42	0.14	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-07 D
Client ID: GPR790-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:05
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	34.		mg/kg	6.5	2.2	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-08 D
Client ID: GPR791-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:25
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1200		mg/kg	2.4	0.81	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-09 D
Client ID: GPR791-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:44
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	4.0	J	mg/kg	4.5	1.5	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-10 D
Client ID: GPR791-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:04
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	160		mg/kg	0.49	0.16	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-11 D
Client ID: GPR791-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:24
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1300		mg/kg	5.0	1.6	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-12 D
Client ID: GPR791-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:44
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	9.8		mg/kg	0.60	0.20	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-13 D
Client ID: GPR791-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:04
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	380		mg/kg	1.8	0.61	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-14 D
Client ID: GPR791-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:23
Analyst: NLK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	13.		mg/kg	0.29	0.097	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-15 D
Client ID: GPR791-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:43
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7.1		mg/kg	0.36	0.12	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-16
Client ID: FB-080122-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 11:39
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-17
Client ID: FB-080122-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 12:03
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-15 Batch: WG1671226-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 16-17 Batch: WG1671475-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-15 Batch: WG1671226-3 WG1671226-4								
Benzene	82		87		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 16-17 Batch: WG1671475-3 WG1671475-4								
Benzene	92		95		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	80		82		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	121		117		70-130
Dibromofluoromethane	90		91		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-01
Client ID: GPR790-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-02
Client ID: GPR790-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.2		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-03
Client ID: GPR790-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-04
Client ID: GPR790-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:30
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-05
Client ID: GPR790-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:40
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-06
Client ID: GPR790-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 11:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.4		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-07
Client ID: GPR790-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 12:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-08
Client ID: GPR791-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-09
Client ID: GPR791-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.3		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-10
Client ID: GPR791-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-11
Client ID: GPR791-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-12
Client ID: GPR791-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:40
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-13
Client ID: GPR791-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-14
Client ID: GPR791-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 14:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-15
Client ID: GPR791-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 14:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1670051-1 QC Sample: L2241030-01 Client ID: GPR790-01-SS01						
Solids, Total	77.6	76.5	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-01A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-01B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-01C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-01D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-02A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-02B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-02C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-02D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-03A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-03B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-03C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-03D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-04A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-04B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-04C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-04D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-05A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-05B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-05C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-05D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-06A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-06B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-06C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-06D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-07A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-07B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-07C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-07D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-08A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-08B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-08C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-08D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-09A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-09B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-09C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-09D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-10A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-10B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-10C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-10D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-11A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-11B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-11C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-11D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-12A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-12B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-12C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-12D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-13A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-13B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-13C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-13D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-14A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-14B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-14C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-14D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-15A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-15B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-15C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-15D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-16A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-16B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-16C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241030

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Report Information — Data Deliverables

- ☐ FAX
- ☒ EMAIL
- ☒ ADEx
- ☐ Add'l Deliverables

Billing Information

- ☐ Same as Client info
- PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program — Criteria

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments	TOTAL # BOTTLES
41036 01	GPR-790-01-5501	8/1/22	1100	S	AM	☑		4
02	GPR-790-02-5501		1110			☑		
03	GPR-790-03-5501		1120			☑		
04	GPR-790-04-5501		1130			☑		
05	GPR-790-05-5501		1140			☑		
06	GPR-790-06-5501		1150			☑		
07	GPR-790-07-5501		1200			☑		
08	GPR-791-01-5501		1300			☑		
09	GPR-791-02-5501		1310			☑		
10	GPR-791-03-5501		1320			☑		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22		8/1/22 14:48
	8/1/22 10:00		
	8/1/22 24:00		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241030

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program: Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments	TOTAL # BOTTLES
41030 11	GPR-791-04-5501	8/1/22	1330	S		☑		4
12	GPR-791-05-5501		1340			☑		
13	GPR-791-06-5501		1350			☑		
14	GPR-791-07-5501		1400			☑		
15	GPR-791-08-5501		1410			☑		
16	FB-080122-1		1430	W		☑		
17	FB-080122-2		1440			☑		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-		
Preservative	-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22	AAL	8/1/22 14:48
	8/1/22 1800		8/1/22 2100
	8/1/22		8/2/22 23:3

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HW)
(rev. 9-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2241031
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/08/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241031-01	GPR1116-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 08:45	08/01/22
L2241031-02	GPR1116-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:00	08/01/22
L2241031-03	GPR1116-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:10	08/01/22
L2241031-04	GPR1116-08-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:50	08/01/22
L2241031-05	GPR1116-09-SS01	SOIL	PHILADELPHIA, PA	08/01/22 10:10	08/01/22
L2241031-06	GPR1116-10-SS01	SOIL	PHILADELPHIA, PA	08/01/22 10:30	08/01/22
L2241031-07	GPR1116-11-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:00	08/01/22
L2241031-08	GPR1116-12-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:30	08/01/22
L2241031-09	GPR1116-13-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:45	08/01/22
L2241031-10	GPR1116-14-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:20	08/01/22
L2241031-11	GPR1116-15-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:35	08/01/22
L2241031-12	FB-080122-3	WATER	PHILADELPHIA, PA	08/01/22 14:35	08/01/22
L2241031-13	FB-080122-4	WATER	PHILADELPHIA, PA	08/01/22 14:40	08/01/22
L2241031-14	TB-080122	WATER	PHILADELPHIA, PA	08/01/22 00:00	08/01/22
L2241031-15	DUP-48	SOIL	PHILADELPHIA, PA	08/01/22 00:00	08/01/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241031-01: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2241031-01: The internal standard (IS) responses for chlorobenzene-d5 (44%) and 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (146%) and 4-bromofluorobenzene (410%) were outside the acceptance criteria; however, re-analysis achieved the following result: 1,2-dichloroethane-d4 (148%). The results of both analyses are reported.

L2241031-02D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

The surrogate recovery for the following samples is outside the acceptance criteria for 4-bromofluorobenzene; however, the samples were not re-analyzed due to coelution with an obvious interference. Copies of the chromatograms are included as an attachment to this report:

L2241031-02D: 169%

L2241031-03: 217%

L2241031-08: 152%

L2241031-09: 142%

L2241031-10: 167%

L2241031-11: 192%

L2241031-07: The internal standard (IS) responses for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (581%) were outside the acceptance criteria due to obvious interferences.

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2241031
Project Number: 200.00135.006 **Report Date:** 08/08/22

Case Narrative (continued)

A copy of the chromatogram is included as an attachment to this report. A high-level analysis was performed, and those results are also reported.
L2241031-11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

Semivolatile Organics
L2241031-03D: The sample has elevated detection limits due to the limited sample volume utilized during extraction and the dilution required by the sample matrix.
L2241031-03D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Total Metals
L2241031-04 and -15: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.
The WG1670165-3 MS recovery, performed on L2241031-01, is outside the acceptance criteria for lead (65%). A post digestion spike was performed and yielded an unacceptable recovery of 52%. The serial dilution recovery was not acceptable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.
The WG1670165-4 Laboratory Duplicate RPD for lead (35%), performed on L2241031-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.
The WG1670165-6 serial dilution analysis, associated with L2241031-01, had a %D above the acceptance criteria for lead (47%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/08/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:03
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	1
Benzene	0.053		mg/kg	0.047	0.016	1
1,2-Dichloroethane	ND		mg/kg	0.094	0.024	1
Toluene	0.078	J	mg/kg	0.094	0.051	1
1,2-Dibromoethane	ND		mg/kg	0.047	0.028	1
Ethylbenzene	0.022	J	mg/kg	0.094	0.013	1
p/m-Xylene	0.063	J	mg/kg	0.19	0.053	1
o-Xylene	0.056	J	mg/kg	0.094	0.027	1
Xylenes, Total	0.12	J	mg/kg	0.094	0.027	1
Isopropylbenzene	0.80		mg/kg	0.094	0.010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.19	0.018	1
1,2,4-Trimethylbenzene	0.78		mg/kg	0.19	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/04/22 14:24
Analyst: AJK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.0027		mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	0.0021		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	0.0016	J	mg/kg	0.0018	0.00025	1
p/m-Xylene	0.0041		mg/kg	0.0036	0.0010	1
o-Xylene	0.014		mg/kg	0.0018	0.00052	1
Xylenes, Total	0.018		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.046		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	0.0022	J	mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	0.32		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	**146**	Q	70-130
4-Bromofluorobenzene	**410**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01 R
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 00:27
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.00064	J	mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	0.00024	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00082	J	mg/kg	0.0014	0.00041	1
Xylenes, Total	0.00082	J	mg/kg	0.0014	0.00041	1
Isopropylbenzene	0.00069	J	mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0033		mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**148**	Q	70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02 D
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:23
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.5	0.15	10
Benzene	ND		mg/kg	0.38	0.13	10
1,2-Dichloroethane	ND		mg/kg	0.77	0.20	10
Toluene	ND		mg/kg	0.77	0.42	10
1,2-Dibromoethane	ND		mg/kg	0.38	0.22	10
Ethylbenzene	0.19	J	mg/kg	0.77	0.11	10
p/m-Xylene	0.92	J	mg/kg	1.5	0.43	10
o-Xylene	0.24	J	mg/kg	0.77	0.22	10
Xylenes, Total	1.2	J	mg/kg	0.77	0.22	10
Isopropylbenzene	18.		mg/kg	0.77	0.084	10
1,3,5-Trimethylbenzene	0.15	J	mg/kg	1.5	0.15	10
1,2,4-Trimethylbenzene	1.2	J	mg/kg	1.5	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**169**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:43
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.18	0.019	1
Benzene	0.037	J	mg/kg	0.046	0.015	1
1,2-Dichloroethane	ND		mg/kg	0.093	0.024	1
Toluene	0.17		mg/kg	0.093	0.050	1
1,2-Dibromoethane	ND		mg/kg	0.046	0.027	1
Ethylbenzene	0.087	J	mg/kg	0.093	0.013	1
p/m-Xylene	0.30		mg/kg	0.18	0.052	1
o-Xylene	0.13		mg/kg	0.093	0.027	1
Xylenes, Total	0.43		mg/kg	0.093	0.027	1
Isopropylbenzene	8.4		mg/kg	0.093	0.010	1
1,3,5-Trimethylbenzene	0.12	J	mg/kg	0.18	0.018	1
1,2,4-Trimethylbenzene	2.7		mg/kg	0.18	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	**217**	Q	70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/04/22 14:02
Analyst: AJK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.016	1
Benzene	35.	E	mg/kg	0.039	0.013	1
1,2-Dichloroethane	ND		mg/kg	0.078	0.020	1
Toluene	6.8		mg/kg	0.078	0.042	1
1,2-Dibromoethane	ND		mg/kg	0.039	0.023	1
Ethylbenzene	0.34		mg/kg	0.078	0.011	1
p/m-Xylene	1.0		mg/kg	0.16	0.043	1
o-Xylene	0.075	J	mg/kg	0.078	0.022	1
Xylenes, Total	1.1	J	mg/kg	0.078	0.022	1
Isopropylbenzene	0.022	J	mg/kg	0.078	0.0084	1
1,3,5-Trimethylbenzene	0.025	J	mg/kg	0.16	0.015	1
1,2,4-Trimethylbenzene	0.10	J	mg/kg	0.16	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04 D
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 15:03
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	28.		mg/kg	0.19	0.064	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 15:23
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.00064	J	mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:04
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	0.00030	J	mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.00084	J	mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	0.00022	J	mg/kg	0.0010	0.00014	1
p/m-Xylene	0.0010	J	mg/kg	0.0020	0.00057	1
o-Xylene	0.00056	J	mg/kg	0.0010	0.00029	1
Xylenes, Total	0.0016	J	mg/kg	0.0010	0.00029	1
Isopropylbenzene	0.00054	J	mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	0.00025	J	mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	0.00072	J	mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:24
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.017	1
Benzene	ND		mg/kg	0.041	0.014	1
1,2-Dichloroethane	ND		mg/kg	0.083	0.021	1
Toluene	ND		mg/kg	0.083	0.045	1
1,2-Dibromoethane	ND		mg/kg	0.041	0.024	1
Ethylbenzene	0.015	J	mg/kg	0.083	0.012	1
p/m-Xylene	0.084	J	mg/kg	0.16	0.046	1
o-Xylene	0.026	J	mg/kg	0.083	0.024	1
Xylenes, Total	0.11	J	mg/kg	0.083	0.024	1
Isopropylbenzene	0.068	J	mg/kg	0.083	0.0090	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.16	0.016	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.16	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 01:08
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.00090	J	mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0017	J	mg/kg	0.0024	0.00067	1
o-Xylene	0.0032		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0049	J	mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.017		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0016	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0037		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**581**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 03:56
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.13	0.013	1
Benzene	0.052		mg/kg	0.033	0.011	1
1,2-Dichloroethane	ND		mg/kg	0.066	0.017	1
Toluene	0.29		mg/kg	0.066	0.036	1
1,2-Dibromoethane	ND		mg/kg	0.033	0.019	1
Ethylbenzene	0.12		mg/kg	0.066	0.0093	1
p/m-Xylene	1.1		mg/kg	0.13	0.037	1
o-Xylene	0.16		mg/kg	0.066	0.019	1
Xylenes, Total	1.3		mg/kg	0.066	0.019	1
Isopropylbenzene	3.8		mg/kg	0.066	0.0072	1
1,3,5-Trimethylbenzene	3.8		mg/kg	0.13	0.013	1
1,2,4-Trimethylbenzene	16.		mg/kg	0.13	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	126		70-130
4-Bromofluorobenzene	**152**	Q	70-130
Dibromofluoromethane	78		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:06
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00064	J	mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.0029		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	0.0011	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0086		mg/kg	0.0026	0.00073	1
o-Xylene	0.0056		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.014		mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0034		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.0018	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0048		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**142**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:27
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0012		mg/kg	0.00093	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00093	0.00054	1
Ethylbenzene	0.00041	J	mg/kg	0.0019	0.00026	1
p/m-Xylene	0.0012	J	mg/kg	0.0037	0.0010	1
o-Xylene	0.0013	J	mg/kg	0.0019	0.00054	1
Xylenes, Total	0.0025	J	mg/kg	0.0019	0.00054	1
Isopropylbenzene	0.020		mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**167**	Q	70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:48
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.39	0.039	1
Benzene	0.050	J	mg/kg	0.097	0.032	1
1,2-Dichloroethane	ND		mg/kg	0.19	0.050	1
Toluene	0.35		mg/kg	0.19	0.10	1
1,2-Dibromoethane	ND		mg/kg	0.097	0.057	1
Ethylbenzene	0.27		mg/kg	0.19	0.027	1
p/m-Xylene	1.1		mg/kg	0.39	0.11	1
o-Xylene	0.27		mg/kg	0.19	0.056	1
Xylenes, Total	1.4		mg/kg	0.19	0.056	1
Isopropylbenzene	1.1		mg/kg	0.19	0.021	1
1,3,5-Trimethylbenzene	0.38	J	mg/kg	0.39	0.037	1
1,2,4-Trimethylbenzene	2.6		mg/kg	0.39	0.064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**192**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:34
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:41
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 09:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-14
Client ID: TB-080122
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:47
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-14
Client ID: TB-080122
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 09:42
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:09
Analyst: NLK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00088	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00045	1
Toluene	ND		mg/kg	0.0018	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00088	0.00051	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	0.0011	J	mg/kg	0.0035	0.00098	1
o-Xylene	0.0016	J	mg/kg	0.0018	0.00051	1
Xylenes, Total	0.0027	J	mg/kg	0.0018	0.00051	1
Isopropylbenzene	0.0040		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.0038		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/02/22 18:07
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 12-14 Batch: WG1670324-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1671226-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1671227-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,09-10,15 Batch: WG1671352-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 07,11 Batch: WG1671356-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 12-14 Batch: WG1671475-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1671502-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1671744-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 20:35
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,07 Batch: WG1671753-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 20:35
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08 Batch: WG1671755-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 12-14		Batch: WG1670324-2						
1,2-Dibromoethane	118		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1671226-3 WG1671226-4								
Methyl tert butyl ether	83		90		66-130	8		30
Benzene	82		87		70-130	6		30
1,2-Dichloroethane	82		89		70-130	8		30
Toluene	77		80		70-130	4		30
1,2-Dibromoethane	80		87		70-130	8		30
Ethylbenzene	83		86		70-130	4		30
p/m-Xylene	83		87		70-130	5		30
o-Xylene	85		89		70-130	5		30
Isopropylbenzene	84		88		70-130	5		30
1,3,5-Trimethylbenzene	85		88		70-130	3		30
1,2,4-Trimethylbenzene	84		87		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1671227-3 WG1671227-4								
Methyl tert butyl ether	83		90		66-130	8		30
Benzene	82		87		70-130	6		30
1,2-Dichloroethane	82		89		70-130	8		30
Toluene	77		80		70-130	4		30
1,2-Dibromoethane	80		87		70-130	8		30
Ethylbenzene	83		86		70-130	4		30
p/m-Xylene	83		87		70-130	5		30
o-Xylene	85		89		70-130	5		30
Isopropylbenzene	84		88		70-130	5		30
1,3,5-Trimethylbenzene	85		88		70-130	3		30
1,2,4-Trimethylbenzene	84		87		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	101		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,09-10,15 Batch: WG1671352-3 WG1671352-4								
Methyl tert butyl ether	77		78		66-130	1		30
Benzene	85		84		70-130	1		30
1,2-Dichloroethane	84		84		70-130	0		30
Toluene	85		86		70-130	1		30
1,2-Dibromoethane	88		89		70-130	1		30
Ethylbenzene	91		90		70-130	1		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		90		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	94		92		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	90		88		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 07,11 Batch: WG1671356-3 WG1671356-4								
Methyl tert butyl ether	77		78		66-130	1		30
Benzene	85		84		70-130	1		30
1,2-Dichloroethane	84		84		70-130	0		30
Toluene	85		86		70-130	1		30
1,2-Dibromoethane	88		89		70-130	1		30
Ethylbenzene	91		90		70-130	1		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		90		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	94		92		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	90		88		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 12-14 Batch: WG1671475-3 WG1671475-4								
Methyl tert butyl ether	91		98		63-130	7		20
Benzene	92		95		70-130	3		20
1,2-Dichloroethane	83		87		70-130	5		20
Toluene	99		100		70-130	1		20
1,2-Dibromoethane	89		97		70-130	9		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	120		120		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	80		82		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	121		117		70-130
Dibromofluoromethane	90		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1671502-3 WG1671502-4								
Methyl tert butyl ether	75		74		66-130	1		30
Benzene	83		82		70-130	1		30
1,2-Dichloroethane	81		81		70-130	0		30
Toluene	83		82		70-130	1		30
1,2-Dibromoethane	85		84		70-130	1		30
Ethylbenzene	88		87		70-130	1		30
p/m-Xylene	88		88		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	89		87		70-130	2		30
1,3,5-Trimethylbenzene	90		87		70-130	3		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	92		90		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1671744-3 WG1671744-4								
Methyl tert butyl ether	75		74		66-130	1		30
Benzene	83		82		70-130	1		30
1,2-Dichloroethane	81		81		70-130	0		30
Toluene	83		82		70-130	1		30
1,2-Dibromoethane	85		84		70-130	1		30
Ethylbenzene	88		87		70-130	1		30
p/m-Xylene	88		88		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	89		87		70-130	2		30
1,3,5-Trimethylbenzene	90		87		70-130	3		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	93		94		70-130
Dibromofluoromethane	92		90		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,07 Batch: WG1671753-3 WG1671753-4								
Methyl tert butyl ether	110		90		66-130	20		30
Benzene	102		102		70-130	0		30
1,2-Dichloroethane	96		98		70-130	2		30
Toluene	98		101		70-130	3		30
1,2-Dibromoethane	96		100		70-130	4		30
Ethylbenzene	102		104		70-130	2		30
p/m-Xylene	102		104		70-130	2		30
o-Xylene	99		102		70-130	3		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	90		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08 Batch: WG1671755-3 WG1671755-4								
Methyl tert butyl ether	110		90		66-130	20		30
Benzene	102		102		70-130	0		30
1,2-Dichloroethane	96		98		70-130	2		30
Toluene	98		101		70-130	3		30
1,2-Dibromoethane	96		100		70-130	4		30
Ethylbenzene	102		104		70-130	2		30
p/m-Xylene	102		104		70-130	2		30
o-Xylene	99		102		70-130	3		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	90		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 13:03
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.35		mg/kg	0.22	0.026	1
Fluorene	0.056	J	mg/kg	0.22	0.021	1
Phenanthrene	0.15		mg/kg	0.13	0.026	1
Anthracene	0.055	J	mg/kg	0.13	0.042	1
Pyrene	0.21		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.24		mg/kg	0.13	0.024	1
Chrysene	0.27		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.42		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.40		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.26		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 13:27
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.20	0.024	1
Fluorene	0.22		mg/kg	0.20	0.019	1
Phenanthrene	0.67		mg/kg	0.12	0.024	1
Anthracene	0.18		mg/kg	0.12	0.038	1
Pyrene	0.55		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.27		mg/kg	0.12	0.022	1
Chrysene	0.30		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.44		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.41		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.31		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	44		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03 D
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/08/22 12:10
Analyst: SZ
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	11	1.3	20
Fluorene	1.4	J	mg/kg	11	1.1	20
Phenanthrene	2.8	J	mg/kg	6.6	1.3	20
Anthracene	ND		mg/kg	6.6	2.2	20
Pyrene	ND		mg/kg	6.6	1.1	20
Benzo(a)anthracene	ND		mg/kg	6.6	1.2	20
Chrysene	ND		mg/kg	6.6	1.2	20
Benzo(b)fluoranthene	ND		mg/kg	6.6	1.9	20
Benzo(a)pyrene	ND		mg/kg	8.8	2.7	20
Benzo(ghi)perylene	ND		mg/kg	8.8	1.3	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 14:14
Analyst: CMM
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.21	0.025	1
Fluorene	0.024	J	mg/kg	0.21	0.020	1
Phenanthrene	0.062	J	mg/kg	0.12	0.025	1
Anthracene	ND		mg/kg	0.12	0.041	1
Pyrene	0.041	J	mg/kg	0.12	0.021	1
Benzo(a)anthracene	0.029	J	mg/kg	0.12	0.024	1
Chrysene	0.030	J	mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	0.035	J	mg/kg	0.12	0.035	1
Benzo(a)pyrene	ND		mg/kg	0.17	0.051	1
Benzo(ghi)perylene	ND		mg/kg	0.17	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:01
Analyst: CMM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.20	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	ND		mg/kg	0.12	0.020	1
Benzo(a)anthracene	ND		mg/kg	0.12	0.022	1
Chrysene	ND		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	47		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:25
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.2		mg/kg	0.22	0.026	1
Fluorene	0.14	J	mg/kg	0.22	0.021	1
Phenanthrene	0.34		mg/kg	0.13	0.026	1
Anthracene	0.22		mg/kg	0.13	0.042	1
Pyrene	0.38		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.40		mg/kg	0.13	0.024	1
Chrysene	0.52		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	1.2		mg/kg	0.13	0.036	1
Benzo(a)pyrene	1.4		mg/kg	0.17	0.053	1
Benzo(ghi)perylene	0.94		mg/kg	0.17	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:48
Analyst: CMM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.20	0.024	1
Fluorene	0.036	J	mg/kg	0.20	0.019	1
Phenanthrene	0.083	J	mg/kg	0.12	0.024	1
Anthracene	0.039	J	mg/kg	0.12	0.038	1
Pyrene	0.16		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.13		mg/kg	0.12	0.022	1
Chrysene	0.16		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.18		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.17		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.092	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	48		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:12
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32		mg/kg	0.19	0.023	1
Fluorene	1.2		mg/kg	0.19	0.018	1
Phenanthrene	1.6		mg/kg	0.11	0.023	1
Anthracene	0.45		mg/kg	0.11	0.036	1
Pyrene	0.62		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.34		mg/kg	0.11	0.021	1
Chrysene	0.92		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.68		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.62		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.31		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**157**	Q	23-120
2-Fluorobiphenyl	34		30-120
4-Terphenyl-d14	23		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:35
Analyst: CMM
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.21	0.025	1
Fluorene	0.53		mg/kg	0.21	0.020	1
Phenanthrene	1.5		mg/kg	0.12	0.025	1
Anthracene	0.48		mg/kg	0.12	0.040	1
Pyrene	1.5		mg/kg	0.12	0.021	1
Benzo(a)anthracene	0.85		mg/kg	0.12	0.023	1
Chrysene	0.86		mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	0.92		mg/kg	0.12	0.035	1
Benzo(a)pyrene	0.97		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	0.45		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	47		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:59
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.37		mg/kg	0.27	0.033	1
Fluorene	0.74		mg/kg	0.27	0.027	1
Phenanthrene	1.5		mg/kg	0.16	0.033	1
Anthracene	0.18		mg/kg	0.16	0.054	1
Pyrene	0.62		mg/kg	0.16	0.027	1
Benzo(a)anthracene	0.42		mg/kg	0.16	0.031	1
Chrysene	0.36		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.44		mg/kg	0.16	0.046	1
Benzo(a)pyrene	0.43		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	0.19	J	mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	54		30-120
4-Terphenyl-d14	38		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 17:46
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.9		mg/kg	0.23	0.028	1
Fluorene	0.52		mg/kg	0.23	0.022	1
Phenanthrene	2.8		mg/kg	0.14	0.028	1
Anthracene	1.3		mg/kg	0.14	0.045	1
Pyrene	4.3		mg/kg	0.14	0.023	1
Benzo(a)anthracene	3.7		mg/kg	0.14	0.026	1
Chrysene	3.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	5.1		mg/kg	0.14	0.039	1
Benzo(a)pyrene	5.2		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	3.8		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	51		30-120
4-Terphenyl-d14	45		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:23
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.05	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	83		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:39
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	84		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 18:10
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.23	0.028	1
Fluorene	0.087	J	mg/kg	0.23	0.022	1
Phenanthrene	0.19		mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.044	1
Pyrene	0.10	J	mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.040	J	mg/kg	0.14	0.026	1
Chrysene	0.044	J	mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.042	J	mg/kg	0.14	0.038	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	0.028	J	mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/02/22 16:42
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/02/22 06:01

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-11,15 Batch: WG1670007-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.097	0.020
Anthracene	ND		mg/kg	0.097	0.032
Pyrene	ND		mg/kg	0.097	0.016
Benzo(a)anthracene	ND		mg/kg	0.097	0.018
Chrysene	ND		mg/kg	0.097	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.097	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	95		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:07
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 12-13 Batch: WG1670368-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	48		15-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-11,15 Batch: WG1670007-2 WG1670007-3								
Naphthalene	72		72		40-140	0		50
Fluorene	77		77		40-140	0		50
Phenanthrene	71		71		40-140	0		50
Anthracene	75		75		40-140	0		50
Pyrene	71		70		35-142	1		50
Benzo(a)anthracene	82		78		40-140	5		50
Chrysene	78		74		40-140	5		50
Benzo(b)fluoranthene	94		93		40-140	1		50
Benzo(a)pyrene	94		92		40-140	2		50
Benzo(ghi)perylene	77		73		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	82		83		23-120
2-Fluorobiphenyl	77		76		30-120
4-Terphenyl-d14	86		84		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 12-13 Batch: WG1670368-2 WG1670368-3								
Naphthalene	77		83		40-140	8		40
Fluorene	82		88		40-140	7		40
Phenanthrene	86		92		40-140	7		40
Anthracene	87		92		40-140	6		40
Pyrene	97		97		26-127	0		40
Benzo(a)anthracene	104		100		40-140	4		40
Chrysene	102		98		40-140	4		40
Benzo(b)fluoranthene	105		103		40-140	2		40
Benzo(a)pyrene	95		92		40-140	3		40
Benzo(ghi)perylene	111		108		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	79		87		23-120
2-Fluorobiphenyl	72		78		15-120
4-Terphenyl-d14	88		86		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	67.9		mg/kg	2.49	0.134	1	08/02/22 15:27	08/06/22 19:03	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	104		mg/kg	2.25	0.121	1	08/02/22 15:27	08/06/22 19:59	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	119		mg/kg	2.25	0.121	1	08/02/22 15:27	08/06/22 20:04	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	85.3		mg/kg	12.2	0.652	5	08/02/22 15:27	08/08/22 20:03	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	40.8		mg/kg	2.31	0.124	1	08/02/22 15:27	08/06/22 20:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	13.9		mg/kg	2.48	0.133	1	08/02/22 15:27	08/06/22 20:18	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	193		mg/kg	2.30	0.123	1	08/02/22 15:27	08/06/22 20:32	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	97.5		mg/kg	2.15	0.115	1	08/02/22 15:27	08/06/22 20:37	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	375		mg/kg	2.37	0.127	1	08/02/22 15:27	08/06/22 20:41	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	60.2		mg/kg	3.22	0.172	1	08/02/22 15:27	08/06/22 20:46	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	189		mg/kg	2.68	0.143	1	08/02/22 15:27	08/06/22 20:50	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 21:18	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 21:23	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	206		mg/kg	13.4	0.716	5	08/02/22 15:27	08/08/22 20:08	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 12-13 Batch: WG1670146-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 20:05	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-11,15 Batch: WG1670165-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/02/22 15:27	08/06/22 18:40	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 12-13 Batch: WG1670146-2								
Lead, Total	95		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 Batch: WG1670165-2 SRM Lot Number: D113-540								
Lead, Total	93		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 12-13 QC Batch ID: WG1670146-3 QC Sample: L2241079-01 Client ID: MS Sample												
Lead, Total	3.328	530	527.1	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-3 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01												
Lead, Total	67.9	52.7	102	**65**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-4 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Lead, Total	67.9	96.4	mg/kg	**35**	Q	20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2241031
Report Date: 08/08/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-6 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Lead, Total	67.9	99.7	mg/kg	**47**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.1		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.1		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.3		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.2		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.7		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	08/02/22 09:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.0		%	0.100	NA	1	-	08/02/22 09:28	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 11,15 QC Batch ID: WG1670059-1 QC Sample: L2241056-01 Client ID: DUP Sample						
Solids, Total	82.3	82.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1670085-1 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Solids, Total	76.1	76.7	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-01A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241031-01B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-01C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-01D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-01F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-02A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-02B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-02C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-02D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-02E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-02F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-03A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-03B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-03C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-03D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-03F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-04A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-04B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-04C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-04D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-04F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-05A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-05B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-05C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-05D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-05F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-06A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-06B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-06C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-06D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-06F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-07A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241031-07B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-07C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-07D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-07F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-08A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-08B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-08C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-08D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-08E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-08F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-09A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-09B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-09C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-09D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-09E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-09F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-10A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-10B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-10C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-10D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-10F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-11A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-11B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-11C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-11D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-11F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-12A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12C	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-12E	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-12F	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-12G	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-12H	Plastic 250ml HNO3 preserved	C	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2241031-13A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-13B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-13C	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-13D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-13E	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-13F	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-13G	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-13H	Plastic 250ml HNO3 preserved	C	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2241031-14A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-14B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-14C	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-14D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-15A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-15B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-15C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-15D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-15F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241031

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5 DAY*

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41031 01	GPR1116-05-5501	8/1	0845	S	TS	
02	GPR1116-06-5501		0900			
03	GPR1116-07-5501		0960			
04	GPR1116-08-5501		0956			
05	GPR1116-09-5501		1010			
06	GPR1116-10-5501		630			
07	GPR1116-11-5501		1100			
08	GPR1116-12-5501		1230			
09	GPR1116-13-5501		1245			
10	GPR1116-14-5501		1320			

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22	ST-AAL	8/1/22 14:40
	8/1/22 A'o		
	8/1/22 20		8/1/22 23:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(MA-LI) (rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241031

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5-DAY

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5 | VOC (Option of SL1-5) | EDB (8011)

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SHORT LIST 1-5	VOC (Option of SL1-5)	EDB (8011)	Sample Specific Comments
41031 11	CPRH16-15-5501	8/1	1335	S	TS	☑	☐	☐	
12	FB-080122-3		1435	W	TS	☑	☐	☑	
13	FB-GR0122-1		1440	W	TS	☑	☐	☑	
14	TB-080122		-	W	TS	☐	☑	☑	
15	DUP-48		-	S	TS	☑	☐	☐	

Container Type	-	-	G
Preservative	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22	AAL	8/1/22 1449
	8/1/22 1801		8/1 1801
	8/1/22 2100		8/1/22 2100
			8/1/22 2325

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 8-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

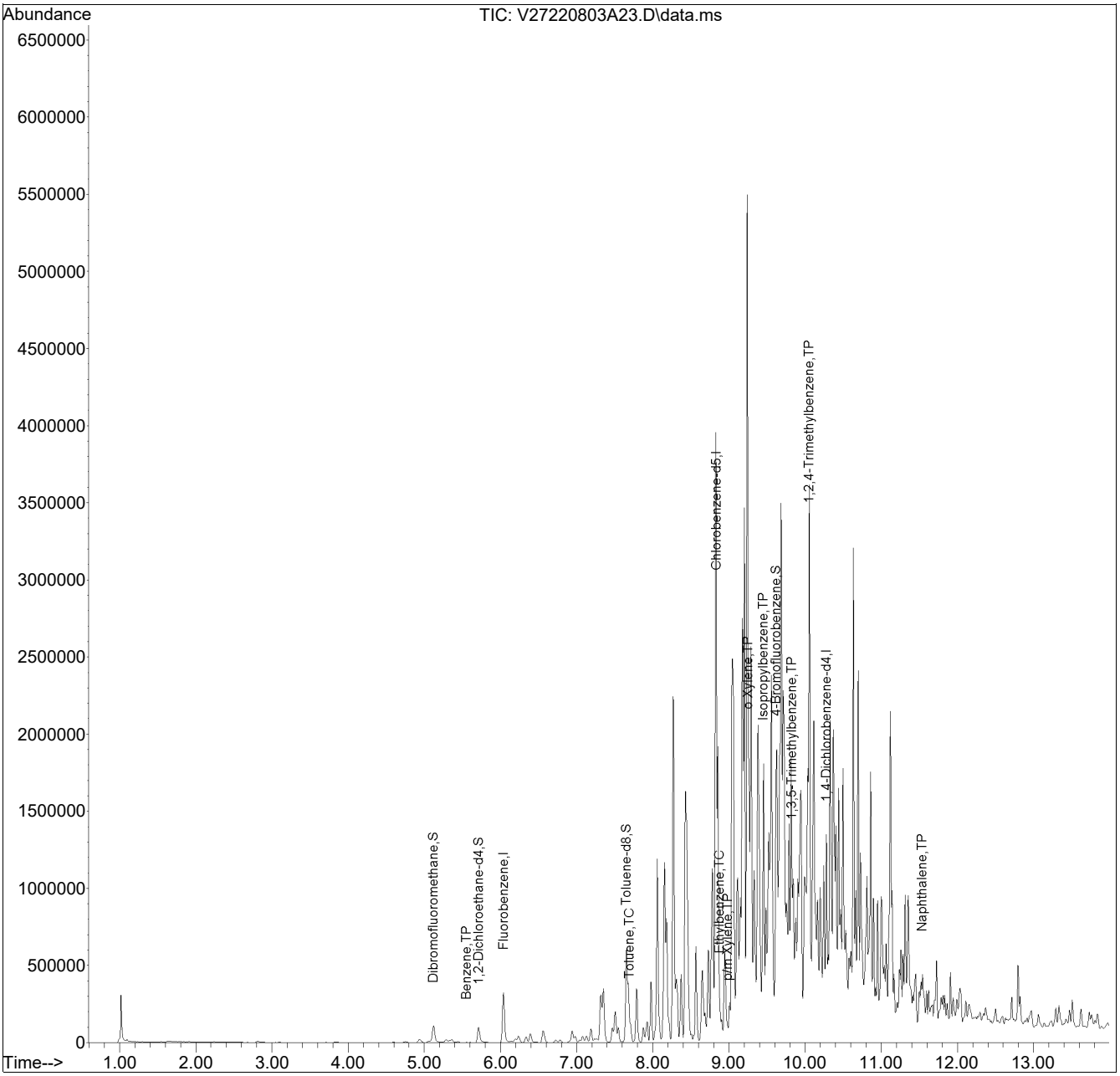
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA127\2022\220803A\
Data File : V27220803A23.D
Acq On : 03 Aug 2022 02:23 pm
Operator : VOA127:NLK
Sample : L2241031-02D,31H,4.39,5,0.010,,A
Misc : WG1671226,ICAL19153
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 04 09:48:00 2022
Quant Method : I:\VOLATILES\VOA127\2022\220803A\V127_220706A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 07 06:48:30 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V27220803A01.D•

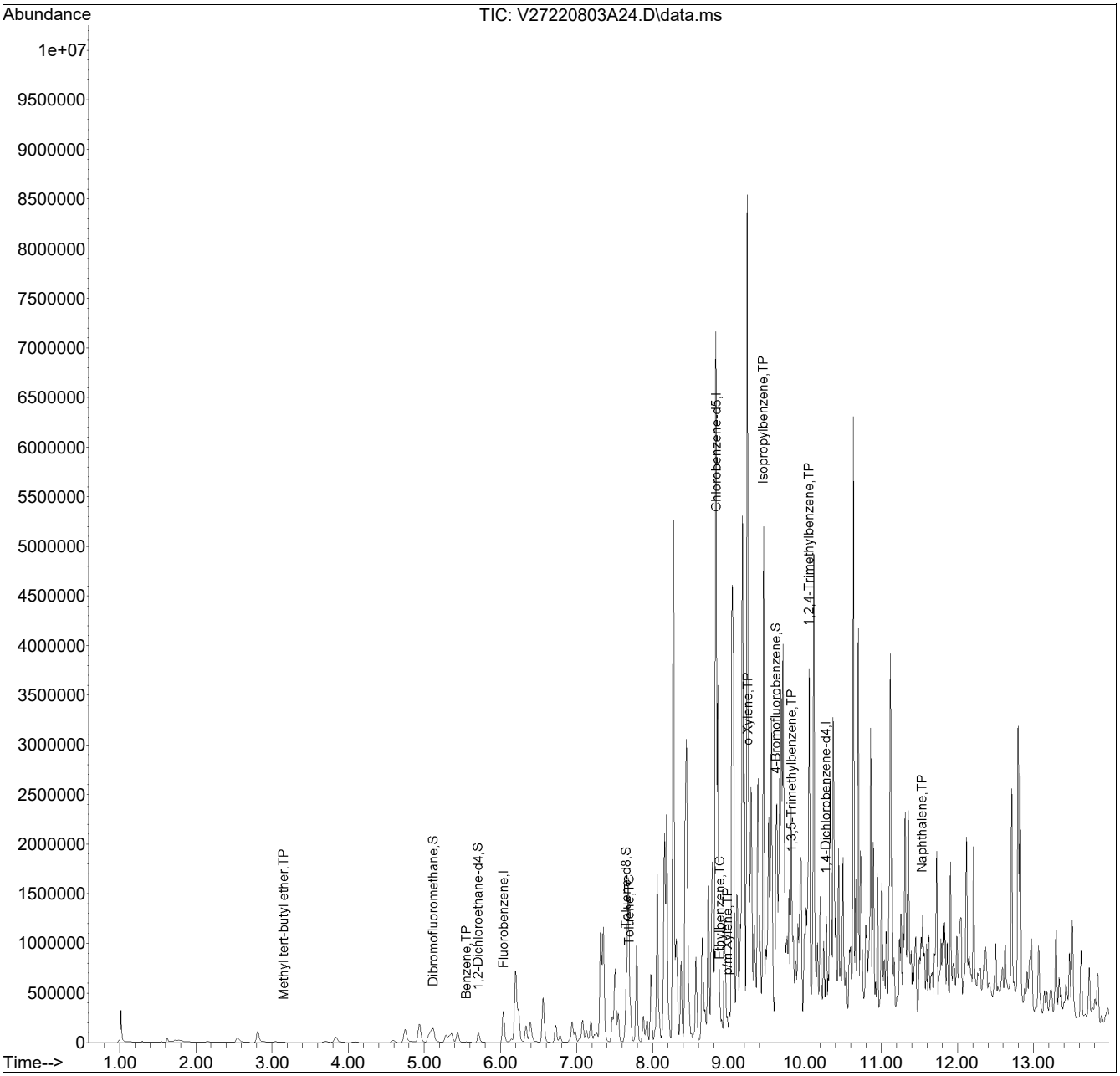


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA127\2022\220803A\
Data File : V27220803A24.D
Acq On : 03 Aug 2022 02:43 pm
Operator : VOA127:NLK
Sample : L2241031-03,31H,3.61,5,0.100,,A
Misc : WG1671226,ICAL19153
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 04 09:54:45 2022
Quant Method : I:\VOLATILES\VOA127\2022\220803A\V127_220706A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 07 06:48:30 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V27220803A01.D•

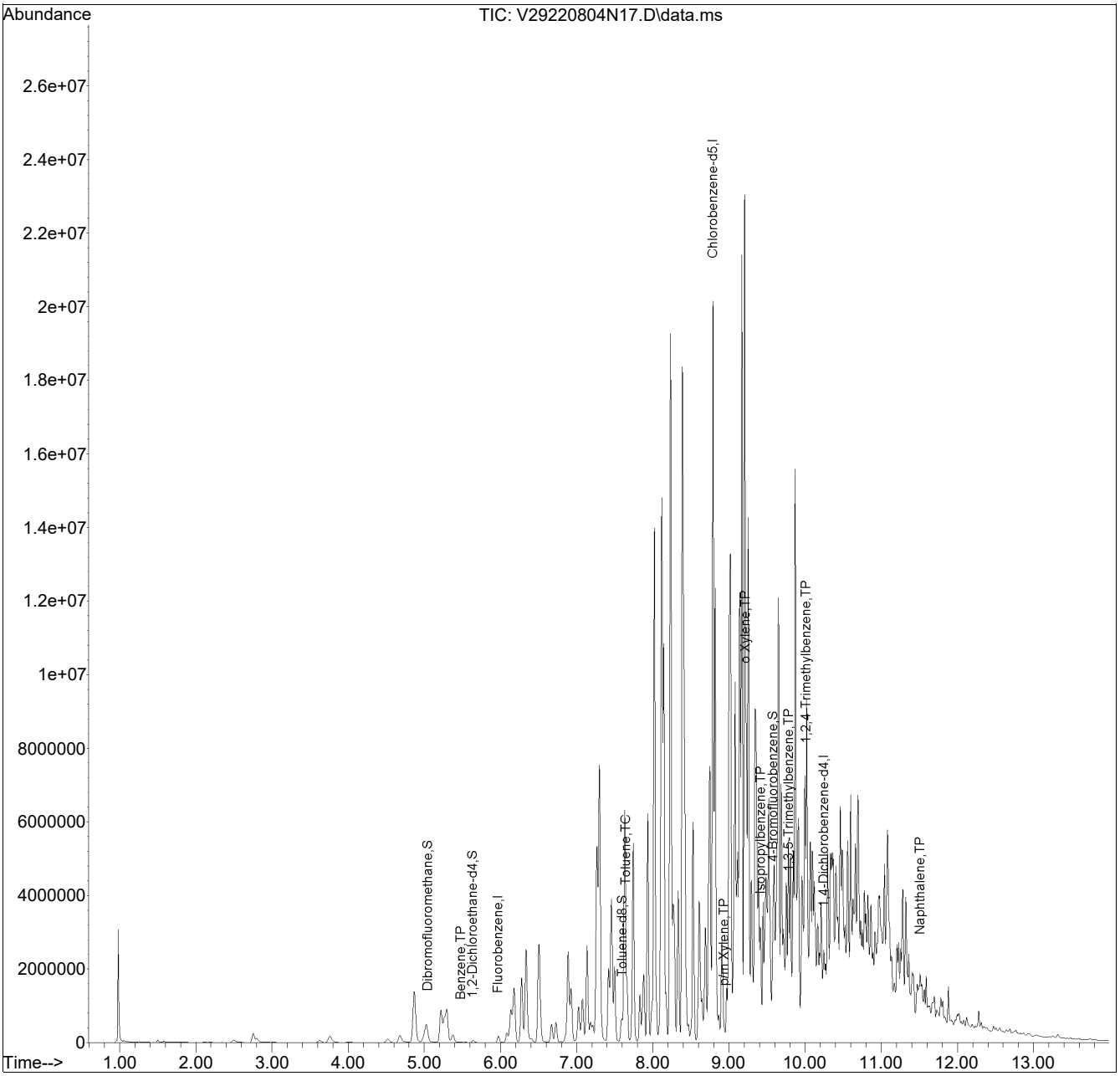


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220804N\
Data File : V29220804N17.D
Acq On : 05 Aug 2022 01:08 am
Operator : VOA129:NLK
Sample : l2241031-07,31,5.09,5,,b
Misc : WG1671753,ICAL19173
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 05 12:24:36 2022
Quant Method : I:\VOLATILES\VOA129\2022\220804N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list04N\V29220804N01.D•



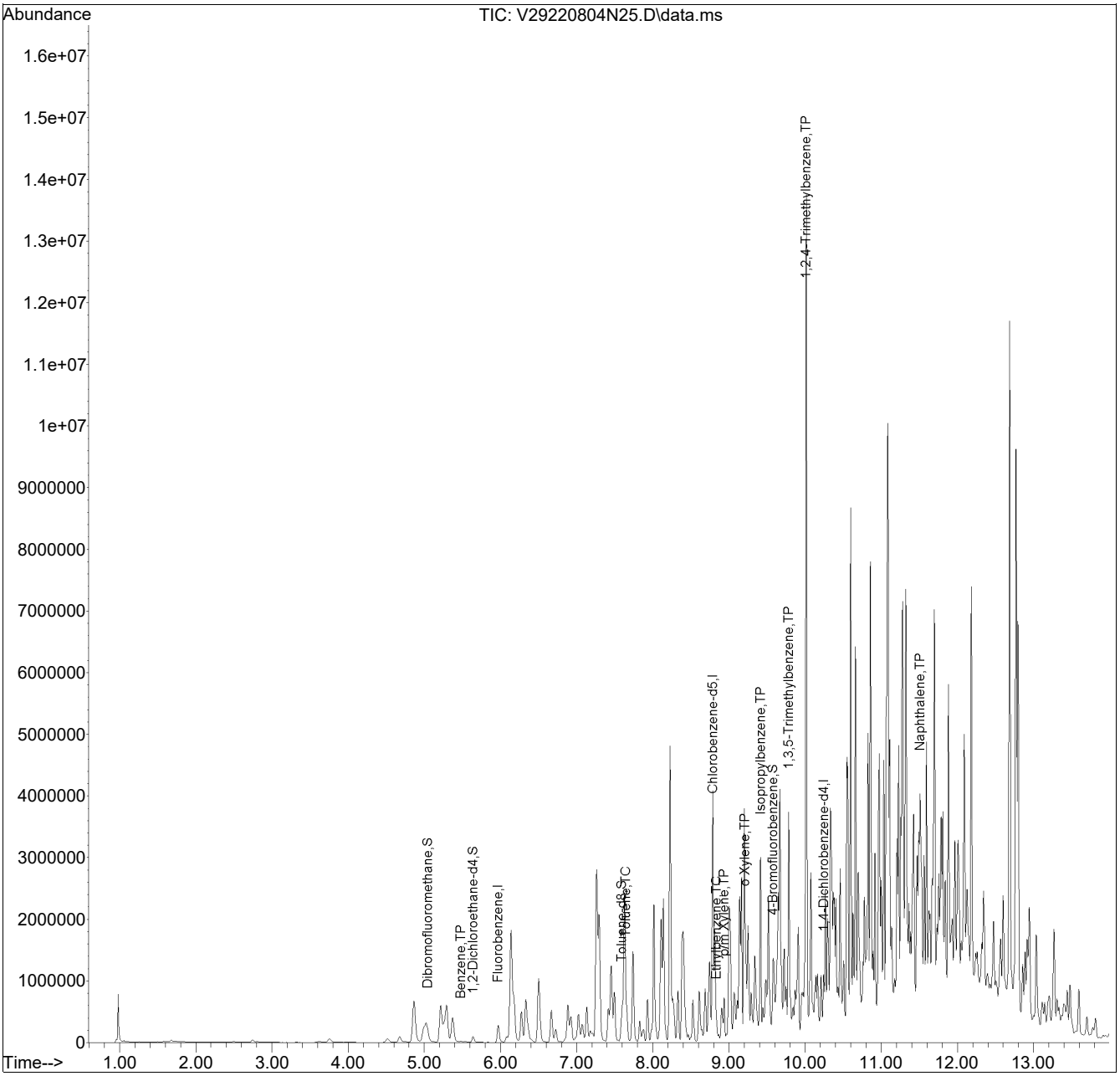
V129_220712N_8260.m Fri Aug 05 12:25:09 2022 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220804N\
Data File : V29220804N25.D
Acq On : 05 Aug 2022 03:56 am
Operator : VOA129:NLK
Sample : l2241031-08,31h,4.68,5,0.100,,a
Misc : WG1671755,ICAL19173
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Aug 05 07:51:26 2022
Quant Method : I:\VOLATILES\VOA129\2022\220804N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list04N\V29220804N01.D•

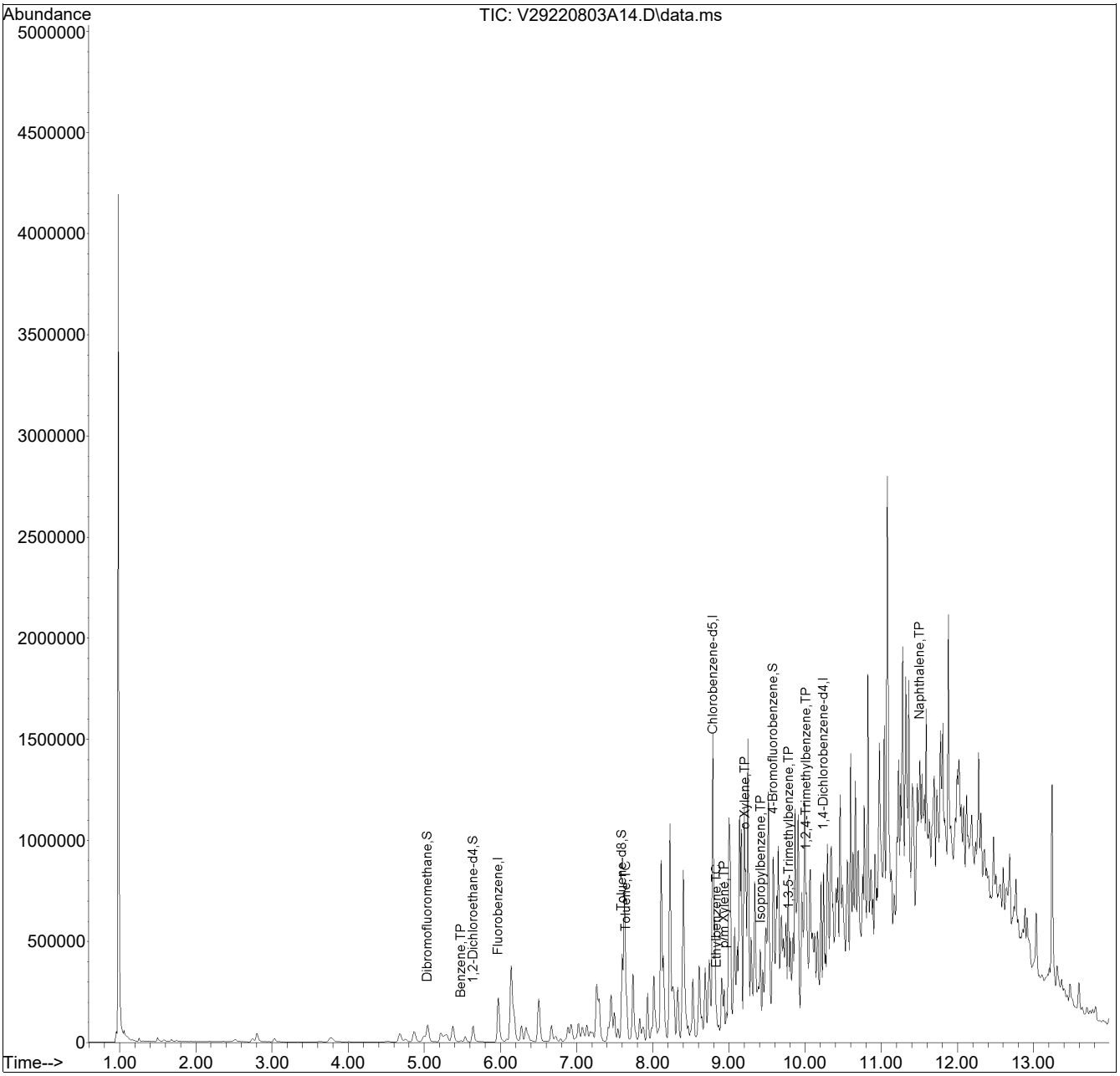


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A14.D
Acq On : 03 Aug 2022 12:06 pm
Operator : VOA129:NLK
Sample : l2241031-09,31,4.79,5,,c
Misc : WG1671352,ICAL19173
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 04 12:45:30 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•

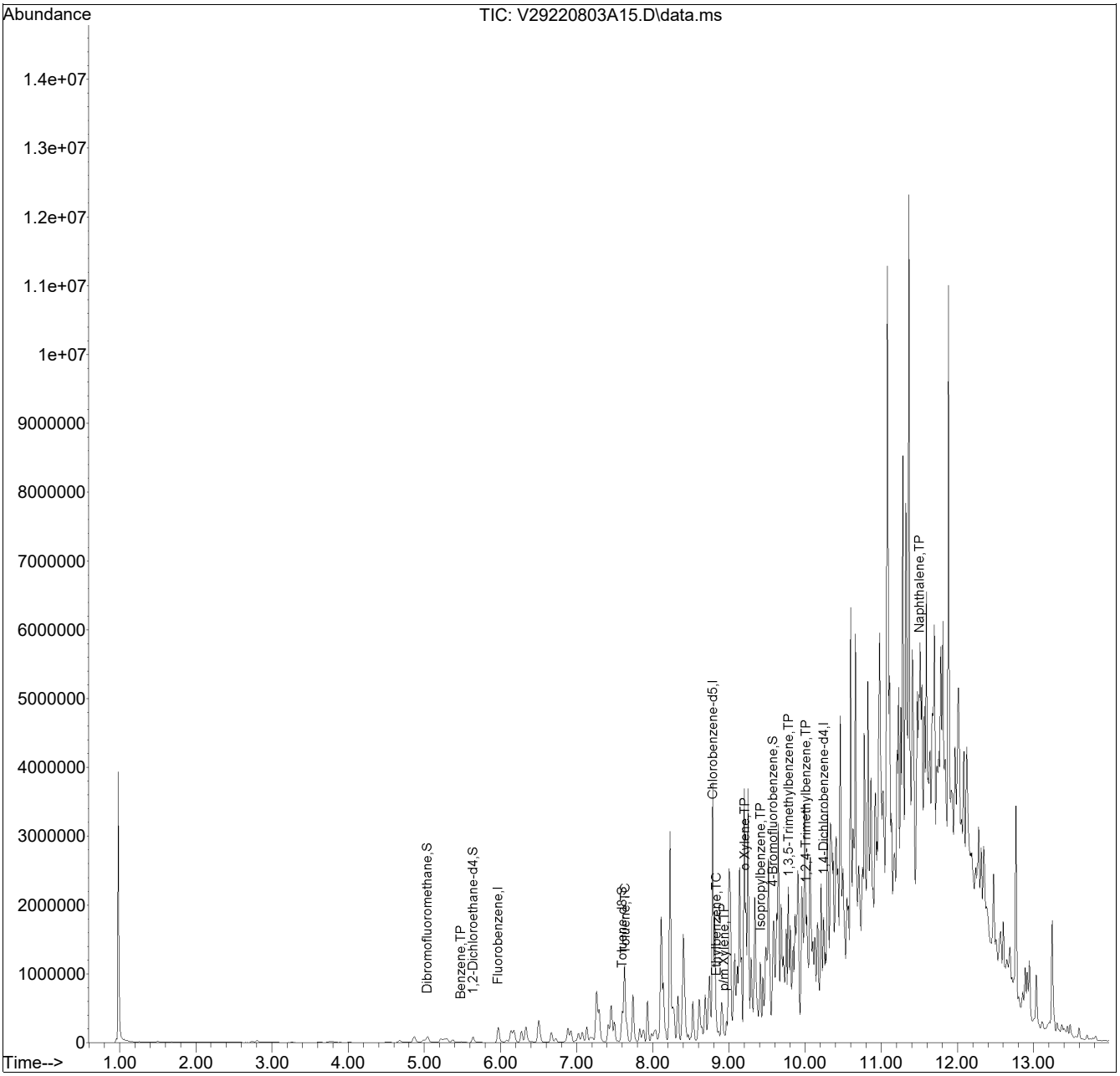


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A15.D
Acq On : 03 Aug 2022 12:27 pm
Operator : VOA129:NLK
Sample : l2241031-10,31,4.51,5,,b
Misc : WG1671352,ICAL19173
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 04 13:23:30 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•

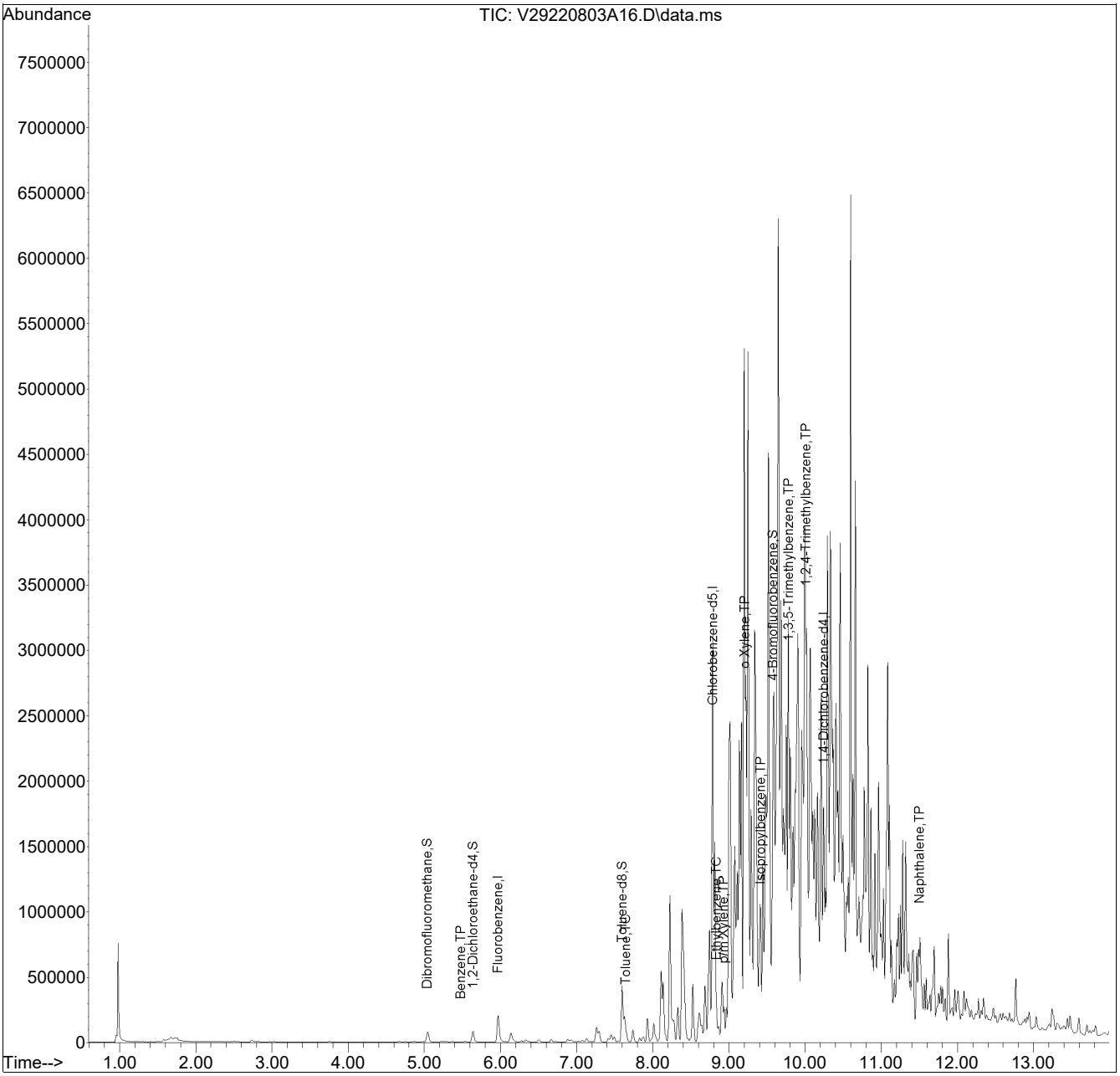


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A16.D
Acq On : 03 Aug 2022 12:48 pm
Operator : VOA129:NLK
Sample : l2241031-11,31h,2.06,5,0.100,,a
Misc : WG1671356,ICAL19173
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 04 12:45:38 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•



ANALYTICAL REPORT

Lab Number:	L2241290
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/08/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241290-01	GPR792-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:00	08/02/22
L2241290-02	GPR792-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:10	08/02/22
L2241290-03	GPR792-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:20	08/02/22
L2241290-04	GPR792-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:30	08/02/22
L2241290-05	GPR792-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:40	08/02/22
L2241290-06	GPR792-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:50	08/02/22
L2241290-07	GPR792-07-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:00	08/02/22
L2241290-08	GPR793-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:10	08/02/22
L2241290-09	GPR793-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:20	08/02/22
L2241290-10	GPR793-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:30	08/02/22
L2241290-11	GPR793-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:40	08/02/22
L2241290-12	GPR793-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:50	08/02/22
L2241290-13	GPR793-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 12:00	08/02/22
L2241290-14	DUP-49	SOIL	PHILADELPHIA, PA	08/02/22 00:00	08/02/22
L2241290-15	FB-080222-1	WATER	PHILADELPHIA, PA	08/02/22 13:00	08/02/22
L2241290-16	FB-080222-2	WATER	PHILADELPHIA, PA	08/02/22 13:10	08/02/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/08/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-01 D
Client ID: GPR792-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:48
Analyst: JC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	2400		mg/kg	15	1.6	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-02 D
Client ID: GPR792-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:23
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4700		mg/kg	49	5.3	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-03 D
Client ID: GPR792-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:47
Analyst: JC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	12000		mg/kg	88	9.6	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-04 D
Client ID: GPR792-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:11
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	5000		mg/kg	54	5.9	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-05 D
Client ID: GPR792-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:35
Analyst: JC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	8900		mg/kg	65	7.1	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-06 D
Client ID: GPR792-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:50
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:59
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4600		mg/kg	70	7.7	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-07 D
Client ID: GPR792-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 14:23
Analyst: JC
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1400		mg/kg	12	1.3	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-08 D
Client ID: GPR793-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/06/22 02:38
Analyst: AJK
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	5500		mg/kg	92	10.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-09 D
Client ID: GPR793-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 14:47
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	11000		mg/kg	100	11.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-10 D
Client ID: GPR793-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:11
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	15000		mg/kg	120	14.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-11 D
Client ID: GPR793-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:35
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	14000		mg/kg	110	12.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-12 D
Client ID: GPR793-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:50
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:35
Analyst: JC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1900		mg/kg	9.2	1.0	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-13 D
Client ID: GPR793-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 12:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:59
Analyst: JC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1800		mg/kg	11	1.2	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-14 D
Client ID: DUP-49
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:59
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4700		mg/kg	59	6.4	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-15
Client ID: FB-080222-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 12:42
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-16
Client ID: FB-080222-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 13:05
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:47
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 15-16 Batch: WG1671600-5					
Isopropylbenzene	ND		ug/l	0.50	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-07,09-14 Batch: WG1672612-5					
Isopropylbenzene	ND		mg/kg	0.050	0.0054

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 18:45
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08 Batch: WG1672622-5					
Isopropylbenzene	ND		mg/kg	0.050	0.0054

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 15-16 Batch: WG1671600-3 WG1671600-4								
Isopropylbenzene	94		96		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		112		70-130
Toluene-d8	99		97		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-07,09-14 Batch: WG1672612-3 WG1672612-4								
Isopropylbenzene	102		99		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83		83		70-130
Toluene-d8	100		95		70-130
4-Bromofluorobenzene	100		99		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08 Batch: WG1672622-3 WG1672622-4								
Isopropylbenzene	115		102		70-130	12		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	106		101		70-130
Dibromofluoromethane	94		89		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-01
Client ID: GPR792-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-02
Client ID: GPR792-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-03
Client ID: GPR792-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.0		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-04
Client ID: GPR792-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-05
Client ID: GPR792-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-06
Client ID: GPR792-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:50
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-07
Client ID: GPR792-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-08
Client ID: GPR793-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.7		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-09
Client ID: GPR793-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.8		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-10
Client ID: GPR793-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-11
Client ID: GPR793-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-12
Client ID: GPR793-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:50
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.7		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-13
Client ID: GPR793-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 12:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-14
Client ID: DUP-49
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.5		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-14 QC Batch ID: WG1670716-1 QC Sample: L2241290-01 Client ID: GPR792-01-SS01						
Solids, Total	85.2	85.1	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-01A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-01B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-01C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-01D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-02A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-02B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-02C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-02D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-03A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-03B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-03C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-03D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-04A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-04B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-04C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-04D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-05A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-05B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-05C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-05D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-06A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-06B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-06C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-06D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-07A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-07B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-07C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-07D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-08A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-08B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-08C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-08D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-09A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-09B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-09C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-09D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-10A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-10B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-10C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-10D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-11A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-11B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-11C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-11D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-12A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-12B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-12C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-12D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-13A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-13B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-13C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-13D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-14A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-14B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-14C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-14D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-15A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-15B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-15C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241290

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2427 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cumene	Sample Specific Comments
41290-01	GPR-792-01-SSOI	8/2/22	1000	S	AM	☒	
-02	GPR-792-02-SSOI		1010			☒	
-03	GPR-792-03-SSOI		1020			☒	
-04	GPR-792-04-SSOI		1030			☒	
-05	GPR-792-05-SSOI		1040			☒	
-06	GPR-792-06-SSOI		1050			☒	
-07	GPR-792-07-SSOI		1100			☒	
-08	GPR-793-01-SSOI		1110			☒	
-09	GPR-793-02-SSOI		1120			☒	
-10	GPR-793-03-SSOI	↓	1130	↓	↓	☒	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	STL ADL	8/2/22 14:52
	8/2/22 1900		8/2/22 1800
	8/2/22 2101		8/2/22 2100
	8/3/22		8/3/22 25:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(FRNT) (rev. 8-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241290

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cumene	Sample Specific Comments
41290-11	GPR-793-04-5501	8/2/22	1140	S	AM	☑	
-12	GPR-793-05-5501		1150			☑	
-13	GPR-793-06-5501		1200			☑	
-14	DUP-49		—			☑	
-15	FB-080222-1		1300	W		☑	
-16	FB-080222-2		1310			☑	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	STS AAL	8/2/22 14:52
	8/2/22		8/2/22 18:20
	8/2/22 2100		8/3/22 0940
	8/3/22		8/3/22 2315

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 6-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2241291
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/10/22

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Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241291-01	GPR494-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 08:45	08/02/22
L2241291-02	GPR494-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 09:10	08/02/22
L2241291-03	GPR494-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 09:30	08/02/22
L2241291-04	GPR494-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:00	08/02/22
L2241291-05	GPR494-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:20	08/02/22
L2241291-06	GPR494-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:40	08/02/22
L2241291-07	GPR494-07-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:00	08/02/22
L2241291-08	GPR494-08-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:20	08/02/22
L2241291-09	GPR494-09-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:30	08/02/22
L2241291-10	GPR1088-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:00	08/02/22
L2241291-11	GPR1088-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:15	08/02/22
L2241291-12	GPR1088-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:30	08/02/22
L2241291-13	DUP-50	SOIL	PHILADELPHIA, PA	08/02/22 00:00	08/02/22
L2241291-14	FB-080222-3	WATER	PHILADELPHIA, PA	08/02/22 13:35	08/02/22
L2241291-15	FB-080222-4	WATER	PHILADELPHIA, PA	08/02/22 13:40	08/02/22
L2241291-16	TB-080222	WATER	PHILADELPHIA, PA	08/02/22 00:00	08/02/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241291-01: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (153%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis; however, since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. The results of both analyses are reported.

L2241291-02: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (47%) and the surrogate recovery for 4-bromofluorobenzene (207%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2241291-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (201%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-04: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (33%) and the surrogate recoveries for toluene-d8 (133%) and 4-bromofluorobenzene (254%) were outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (44%) and 4-bromofluorobenzene (171%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

L2241291-05D: The sample has elevated detection limits due to the dilution required by the elevated

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
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Case Narrative (continued)

concentrations of non-target compounds in the sample.

L2241291-05D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (220%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (149%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-07: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (144%) and 4-bromofluorobenzene (834%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-08: The surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (36%) and 4-bromofluorobenzene (134%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

Semivolatile Organics

L2241291-01D and -03D through -06D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2241291-08D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Total Metals

The WG1670927-3 MS recovery for lead (486%), performed on L2241291-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 08/10/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:13
Analyst: JC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0040		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.033		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	0.036		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.21		mg/kg	0.0024	0.00066	1
o-Xylene	0.095		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.30		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.054		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.16		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.63	E	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**153**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 22:38
Analyst: AJK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.099	0.0099	1
Benzene	ND		mg/kg	0.025	0.0082	1
1,2-Dichloroethane	ND		mg/kg	0.049	0.013	1
Toluene	ND		mg/kg	0.049	0.027	1
1,2-Dibromoethane	ND		mg/kg	0.025	0.014	1
Ethylbenzene	0.022	J	mg/kg	0.049	0.0070	1
p/m-Xylene	0.078	J	mg/kg	0.099	0.028	1
o-Xylene	0.038	J	mg/kg	0.049	0.014	1
Xylenes, Total	0.12	J	mg/kg	0.049	0.014	1
Isopropylbenzene	ND		mg/kg	0.049	0.0054	1
1,3,5-Trimethylbenzene	0.060	J	mg/kg	0.099	0.0095	1
1,2,4-Trimethylbenzene	0.22		mg/kg	0.099	0.016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:40
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.14	0.014	1
Benzene	0.037		mg/kg	0.036	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.072	0.018	1
Toluene	0.047	J	mg/kg	0.072	0.039	1
1,2-Dibromoethane	ND		mg/kg	0.036	0.021	1
Ethylbenzene	0.064	J	mg/kg	0.072	0.010	1
p/m-Xylene	0.078	J	mg/kg	0.14	0.040	1
o-Xylene	0.14		mg/kg	0.072	0.021	1
Xylenes, Total	0.22	J	mg/kg	0.072	0.021	1
Isopropylbenzene	0.63		mg/kg	0.072	0.0078	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.14	0.014	1
1,2,4-Trimethylbenzene	0.061	J	mg/kg	0.14	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 22:58
Analyst: AJK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0041		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	0.0086		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	0.0074		mg/kg	0.0018	0.00026	1
p/m-Xylene	0.0054		mg/kg	0.0037	0.0010	1
o-Xylene	0.025		mg/kg	0.0018	0.00054	1
Xylenes, Total	0.030		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.072		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.00036	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.0053		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	127		70-130
4-Bromofluorobenzene	**207**	Q	70-130
Dibromofluoromethane	79		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 23:40
Analyst: AJK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.00040	J	mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	0.00082	J	mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	0.0012		mg/kg	0.00096	0.00014	1
p/m-Xylene	0.0064		mg/kg	0.0019	0.00054	1
o-Xylene	0.0068		mg/kg	0.00096	0.00028	1
Xylenes, Total	0.013		mg/kg	0.00096	0.00028	1
Isopropylbenzene	0.034		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	0.00040	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.0017	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	125		70-130
4-Bromofluorobenzene	**201**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:33
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00021	1
Benzene	0.0018		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.0050		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	0.0042		mg/kg	0.0010	0.00014	1
p/m-Xylene	0.0096		mg/kg	0.0020	0.00057	1
o-Xylene	0.019		mg/kg	0.0010	0.00030	1
Xylenes, Total	0.029		mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.013		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	0.0057		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	**133**	Q	70-130
4-Bromofluorobenzene	**254**	Q	70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04 R
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 23:19
Analyst: AJK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.00036	J	mg/kg	0.00061	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0011	J	mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00061	0.00036	1
Ethylbenzene	0.0010	J	mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0027		mg/kg	0.0024	0.00068	1
o-Xylene	0.0041		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0068		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0072		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0074		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0010	J	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**171**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05 D
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:00
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.27	0.027	2
Benzene	ND		mg/kg	0.068	0.022	2
1,2-Dichloroethane	ND		mg/kg	0.14	0.035	2
Toluene	0.089	J	mg/kg	0.14	0.074	2
1,2-Dibromoethane	ND		mg/kg	0.068	0.040	2
Ethylbenzene	0.046	J	mg/kg	0.14	0.019	2
p/m-Xylene	0.16	J	mg/kg	0.27	0.076	2
o-Xylene	0.086	J	mg/kg	0.14	0.040	2
Xylenes, Total	0.25	J	mg/kg	0.14	0.040	2
Isopropylbenzene	2.1		mg/kg	0.14	0.015	2
1,3,5-Trimethylbenzene	ND		mg/kg	0.27	0.026	2
1,2,4-Trimethylbenzene	0.15	J	mg/kg	0.27	0.045	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	**220**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 15:30
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	0.00059		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	0.0012		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	0.00067	J	mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0032		mg/kg	0.0022	0.00062	1
o-Xylene	0.0052		mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0084		mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.0091		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	0.0020	J	mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	**149**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:53
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.00050	J	mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0043		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	0.0028		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.041		mg/kg	0.0024	0.00066	1
o-Xylene	0.020		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.061		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.14		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0025		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.018		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	**144**	Q	70-130
4-Bromofluorobenzene	**834**	Q	70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:20
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.0052		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	0.0044		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	0.0030		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.012		mg/kg	0.0028	0.00078	1
o-Xylene	0.0075		mg/kg	0.0014	0.00040	1
Xylenes, Total	0.020		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.0029		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0039		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.012		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08 R
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 21:34
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.016		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0057		mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	0.0036		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.012		mg/kg	0.0024	0.00068	1
o-Xylene	0.0083		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.020		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0019		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0022	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0063		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**134**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 21:54
Analyst: NLK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 18:57
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 10:28
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:04
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 10:52
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-16
Client ID: TB-080222
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:11
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-16
Client ID: TB-080222
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 11:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2241291

Project Number: 200.00135.006 **Report Date:** 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 14-16 Batch: WG1671346-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/08/22 17:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 14-16 Batch: WG1672421-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 16:59
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1672584-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 16:59
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-04 Batch: WG1672587-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,05 Batch: WG1672595-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,04,07 Batch: WG1672597-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06 Batch: WG1672815-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 18:52
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1672860-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08 Batch: WG1672867-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 14-16 Batch: WG1671346-3 WG1671346-4								
Methyl tert butyl ether	87		89		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		110		70-130	10		20
Ethylbenzene	100		110		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	100		105		70-130	5		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	100		110		64-130	10		20
1,2,4-Trimethylbenzene	100		110		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		92		70-130
Toluene-d8	102		100		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	103		102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 14-16 Batch: WG1672421-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1672584-3 WG1672584-4								
Methyl tert butyl ether	91		90		66-130	1		30
Benzene	98		95		70-130	3		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	96		94		70-130	2		30
1,2-Dibromoethane	99		98		70-130	1		30
Ethylbenzene	101		98		70-130	3		30
p/m-Xylene	100		97		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		99		70-130	1		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		99		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-04 Batch: WG1672587-3 WG1672587-4								
Methyl tert butyl ether	91		90		66-130	1		30
Benzene	98		95		70-130	3		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	96		94		70-130	2		30
1,2-Dibromoethane	99		98		70-130	1		30
Ethylbenzene	101		98		70-130	3		30
p/m-Xylene	100		97		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		99		70-130	1		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		99		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,05 Batch: WG1672595-3 WG1672595-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,04,07 Batch: WG1672597-3 WG1672597-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06 Batch: WG1672815-3 WG1672815-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 Batch: WG1672860-3 WG1672860-4								
Methyl tert butyl ether	93		93		66-130	0		30
Benzene	91		90		70-130	1		30
1,2-Dichloroethane	90		90		70-130	0		30
Toluene	84		83		70-130	1		30
1,2-Dibromoethane	90		89		70-130	1		30
Ethylbenzene	90		88		70-130	2		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	91		89		70-130	2		30
Isopropylbenzene	92		92		70-130	0		30
1,3,5-Trimethylbenzene	91		92		70-130	1		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		104		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	99		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1672867-3 WG1672867-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01 D
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 13:44
Analyst: JG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3	J	mg/kg	1.8	0.22	10
Fluorene	5.2		mg/kg	1.8	0.18	10
Phenanthrene	30.		mg/kg	1.1	0.22	10
Anthracene	4.8		mg/kg	1.1	0.35	10
Pyrene	11.		mg/kg	1.1	0.18	10
Benzo(a)anthracene	9.7		mg/kg	1.1	0.20	10
Chrysene	13.		mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	3.7		mg/kg	1.1	0.30	10
Benzo(a)pyrene	7.7		mg/kg	1.4	0.44	10
Benzo(ghi)perylene	2.5		mg/kg	1.4	0.21	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02 D
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 14:32
Analyst: JG
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.4	J	mg/kg	1.9	0.23	10
Fluorene	9.0		mg/kg	1.9	0.18	10
Phenanthrene	71.		mg/kg	1.1	0.23	10
Anthracene	7.1		mg/kg	1.1	0.36	10
Pyrene	39.		mg/kg	1.1	0.19	10
Benzo(a)anthracene	20.		mg/kg	1.1	0.21	10
Chrysene	34.		mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	8.4		mg/kg	1.1	0.32	10
Benzo(a)pyrene	18.		mg/kg	1.5	0.46	10
Benzo(ghi)perylene	7.0		mg/kg	1.5	0.22	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03 D
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 01:40
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.91	0.11	5
Fluorene	4.8		mg/kg	0.91	0.088	5
Phenanthrene	29.		mg/kg	0.54	0.11	5
Anthracene	4.0		mg/kg	0.54	0.18	5
Pyrene	20.		mg/kg	0.54	0.090	5
Benzo(a)anthracene	7.8		mg/kg	0.54	0.10	5
Chrysene	14.		mg/kg	0.54	0.094	5
Benzo(b)fluoranthene	3.6		mg/kg	0.54	0.15	5
Benzo(a)pyrene	7.4		mg/kg	0.72	0.22	5
Benzo(ghi)perylene	2.4		mg/kg	0.72	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04 D
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 02:03
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.36	J	mg/kg	0.93	0.11	5
Fluorene	0.57	J	mg/kg	0.93	0.091	5
Phenanthrene	1.1		mg/kg	0.56	0.11	5
Anthracene	0.59		mg/kg	0.56	0.18	5
Pyrene	8.6		mg/kg	0.56	0.093	5
Benzo(a)anthracene	3.9		mg/kg	0.56	0.10	5
Chrysene	9.7		mg/kg	0.56	0.097	5
Benzo(b)fluoranthene	4.6		mg/kg	0.56	0.16	5
Benzo(a)pyrene	7.4		mg/kg	0.75	0.23	5
Benzo(ghi)perylene	3.5		mg/kg	0.75	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05 D
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 14:55
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.94	J	mg/kg	2.0	0.24	10
Fluorene	8.1		mg/kg	2.0	0.20	10
Phenanthrene	36.		mg/kg	1.2	0.24	10
Anthracene	4.7		mg/kg	1.2	0.39	10
Pyrene	15.		mg/kg	1.2	0.20	10
Benzo(a)anthracene	11.		mg/kg	1.2	0.23	10
Chrysene	16.		mg/kg	1.2	0.21	10
Benzo(b)fluoranthene	3.9		mg/kg	1.2	0.34	10
Benzo(a)pyrene	8.7		mg/kg	1.6	0.49	10
Benzo(ghi)perylene	2.7		mg/kg	1.6	0.24	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06 D
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 15:18
Analyst: JG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.42	J	mg/kg	1.8	0.22	10
Fluorene	1.4	J	mg/kg	1.8	0.17	10
Phenanthrene	7.6		mg/kg	1.1	0.22	10
Anthracene	1.8		mg/kg	1.1	0.35	10
Pyrene	2.3		mg/kg	1.1	0.18	10
Benzo(a)anthracene	2.8		mg/kg	1.1	0.20	10
Chrysene	3.1		mg/kg	1.1	0.18	10
Benzo(b)fluoranthene	1.2		mg/kg	1.1	0.30	10
Benzo(a)pyrene	2.1		mg/kg	1.4	0.43	10
Benzo(ghi)perylene	0.75	J	mg/kg	1.4	0.21	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07 D
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:11
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.98	0.12	5
Fluorene	6.6		mg/kg	0.98	0.095	5
Phenanthrene	30.		mg/kg	0.58	0.12	5
Anthracene	2.8		mg/kg	0.58	0.19	5
Pyrene	7.8		mg/kg	0.58	0.097	5
Benzo(a)anthracene	3.5		mg/kg	0.58	0.11	5
Chrysene	7.0		mg/kg	0.58	0.10	5
Benzo(b)fluoranthene	1.1		mg/kg	0.58	0.16	5
Benzo(a)pyrene	2.7		mg/kg	0.78	0.24	5
Benzo(ghi)perylene	0.70	J	mg/kg	0.78	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08 D
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:33
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.8	J	mg/kg	6.7	0.81	35
Fluorene	11.		mg/kg	6.7	0.65	35
Phenanthrene	110		mg/kg	4.0	0.81	35
Anthracene	23.		mg/kg	4.0	1.3	35
Pyrene	130		mg/kg	4.0	0.66	35
Benzo(a)anthracene	71.		mg/kg	4.0	0.75	35
Chrysene	170		mg/kg	4.0	0.70	35
Benzo(b)fluoranthene	28.		mg/kg	4.0	1.1	35
Benzo(a)pyrene	54.		mg/kg	5.4	1.6	35
Benzo(ghi)perylene	18.		mg/kg	5.4	0.79	35

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:56
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.059	J	mg/kg	0.20	0.024	1
Fluorene	0.030	J	mg/kg	0.20	0.019	1
Phenanthrene	0.45		mg/kg	0.12	0.024	1
Anthracene	0.13		mg/kg	0.12	0.039	1
Pyrene	0.84		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.73		mg/kg	0.12	0.022	1
Chrysene	0.70		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	1.2		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.1		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.51		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:33
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	64		15-120
4-Terphenyl-d14	49		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:49
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	68		15-120
4-Terphenyl-d14	52		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/22 23:47
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-09 Batch: WG1671002-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	103		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:17
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 14-15 Batch: WG1672057-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	53		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-09 Batch: WG1671002-2 WG1671002-3								
Naphthalene	83		77		40-140	8		50
Fluorene	91		84		40-140	8		50
Phenanthrene	81		76		40-140	6		50
Anthracene	87		80		40-140	8		50
Pyrene	83		76		35-142	9		50
Benzo(a)anthracene	93		87		40-140	7		50
Chrysene	88		84		40-140	5		50
Benzo(b)fluoranthene	113		103		40-140	9		50
Benzo(a)pyrene	114		108		40-140	5		50
Benzo(ghi)perylene	92		87		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	94		84		23-120
2-Fluorobiphenyl	83		77		30-120
4-Terphenyl-d14	99		90		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 14-15 Batch: WG1672057-2 WG1672057-3								
Naphthalene	76		73		40-140	4		40
Fluorene	76		73		40-140	4		40
Phenanthrene	76		71		40-140	7		40
Anthracene	74		70		40-140	6		40
Pyrene	67		63		26-127	6		40
Benzo(a)anthracene	79		73		40-140	8		40
Chrysene	85		80		40-140	6		40
Benzo(b)fluoranthene	88		78		40-140	12		40
Benzo(a)pyrene	76		68		40-140	11		40
Benzo(ghi)perylene	82		79		40-140	4		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80		76		23-120
2-Fluorobiphenyl	72		67		15-120
4-Terphenyl-d14	58		54		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	517		mg/kg	2.11	0.113	1	08/03/22 23:50	08/09/22 19:10	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	90.3		mg/kg	2.21	0.118	1	08/03/22 23:50	08/09/22 18:56	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.9		mg/kg	2.12	0.114	1	08/03/22 23:50	08/09/22 19:01	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	238		mg/kg	2.14	0.115	1	08/03/22 23:50	08/09/22 19:06	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	32.0		mg/kg	2.37	0.127	1	08/03/22 23:50	08/09/22 19:43	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	78.1		mg/kg	2.06	0.111	1	08/03/22 23:50	08/09/22 19:48	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.3		mg/kg	2.28	0.122	1	08/03/22 23:50	08/09/22 19:53	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	114		mg/kg	2.26	0.121	1	08/03/22 23:50	08/09/22 19:57	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	70.9		mg/kg	2.36	0.127	1	08/03/22 23:50	08/09/22 20:02	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:45	EPA 3005A	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:50	EPA 3005A	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-09 Batch: WG1670927-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/03/22 23:50	08/09/22 18:47	1,6010D	NB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 14-15 Batch: WG1670990-1										
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:27	1,6010D	EW

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 Batch: WG1670927-2 SRM Lot Number: D113-540								
Lead, Total	81		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 14-15 Batch: WG1670990-2								
Lead, Total	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1670927-3 QC Sample: L2241291-01 Client ID: GPR494-01-SS01												
Lead, Total	517	45.2	737	**486**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 14-15 QC Batch ID: WG1670990-3 QC Sample: L2241354-01 Client ID: MS Sample												
Lead, Total	0.004J	0.53	0.507	96		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1670927-4 QC Sample: L2241291-01 Client ID: GPR494-01-SS01						
Lead, Total	517	569	mg/kg	10		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.5		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.7		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.9		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-10
Client ID: GPR1088-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 13:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.5		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-11
Client ID: GPR1088-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 13:15
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-12
Client ID: GPR1088-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 13:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-13
Client ID: DUP-50
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.0		SU	-	NA	1	-	08/03/22 20:36	1,9040C	AS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.8		SU	-	NA	1	-	08/03/22 20:36	1,9040C	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 14-15 Batch: WG1670909-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 10-13 Batch: WG1671686-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG1670713-1 QC Sample: L2241331-01 Client ID: DUP Sample						
Solids, Total	84.5	85.1	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 09 QC Batch ID: WG1670716-1 QC Sample: L2241290-01 Client ID: DUP Sample						
Solids, Total	85.2	85.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 14-15 QC Batch ID: WG1670909-2 QC Sample: L2240789-01 Client ID: DUP Sample						
pH	6.7	6.6	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 10-13 QC Batch ID: WG1671686-2 QC Sample: L2241901-01 Client ID: DUP Sample						
pH	3.8	3.7	SU	3		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-01A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241291-01B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-01C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-01D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-01F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-02A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241291-02B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-02C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-02D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-02F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-03A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-03B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-03C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-03D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-03E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-03F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-04A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-04B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-04C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-04D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-04F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-05A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-05B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-05C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-05D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-05F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-06A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-06B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-06C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-06D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-06E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-06F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-07A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-07B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-07C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-07D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-07E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-07F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-08A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-08B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-08C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-08D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-08E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-08F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-09A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-09B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-09C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-09D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-09F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-10A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-11A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-12A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-13A	Glass 250ml/8oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-14A	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14B	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14C	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14D	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-14E	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-14F	Plastic 60ml unpreserved	C	7	7	3.6	Y	Absent		PH-9040(1)
L2241291-14G	Plastic 250ml HNO3 preserved	C	<2	<2	3.6	Y	Absent		PB-TI(180)
L2241291-14H	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-14I	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-15A	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15B	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15C	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15D	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-15E	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-15F	Plastic 60ml unpreserved	C	7	7	3.6	Y	Absent		PH-9040(1)
L2241291-15G	Plastic 250ml HNO3 preserved	C	<2	<2	3.6	Y	Absent		PB-TI(180)
L2241291-15H	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-15I	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-16A	Vial HCl preserved	B	NA		3.0	Y	Absent		PA-8260(14)
L2241291-16B	Vial HCl preserved	B	NA		3.0	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-16C	Vial Na2S2O3 preserved	B	NA		3.0	Y	Absent		8011(14)
L2241291-16D	Vial Na2S2O3 preserved	B	NA		3.0	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241291

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5
PAH

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41291-01	GPR494-01-5501	8/2	0845	SS	TS	
-02	GPR494-02-5501		0910			
-03	GPR494-03-5501		0930			
-04	GPR-494-04-5501		1000			
-05	GPR494-05-5501		1020			
-06	GPR494-06-5501		1040			
-07	GPR494-07-5501		1100			
-08	GPR494-08-5501		1120			
-09	GPR494-09-5501		1130			
-10	GPR1088-01-5501		1300			

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	ST - AAI	8/2/22 14:52
	8/2/22 1600		8/2/22 1600
	8/2/22		8/2/22 2100
	8/3/22		8/4/22 23:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(HW)
(rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241291

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SHORT LIST 1-5	pH	VOC Positive +5C	EDB (8011)	Sample Specific Comments	TOTAL # BOTTLES
41291-1	GPR1088-02-5501	8/2	1315	S	TS	☐	☑	☐	☐		
-12	GPR1088-03-5501		1330	S	TS	☐	☑	☐	☐		
-13	DUP-50		-	S	TS	☐	☑	☐	☐		
-14	FB-080222-3		1335	W	TS	☑	☑	☑	☑		
-15	FB-080222-4		1340	W	TS	☑	☑	☑	☑		
-16	TB-080222		-	W	TS	☐	☐	☑	☑		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22		8/3/22 14:52
	8/3/22		8/3/22 2100
	8/3/22 400		8/3/22 2400
	8/3/22		8/4/22 23:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 31-01(H-L) Rev. 5-JAN-17

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

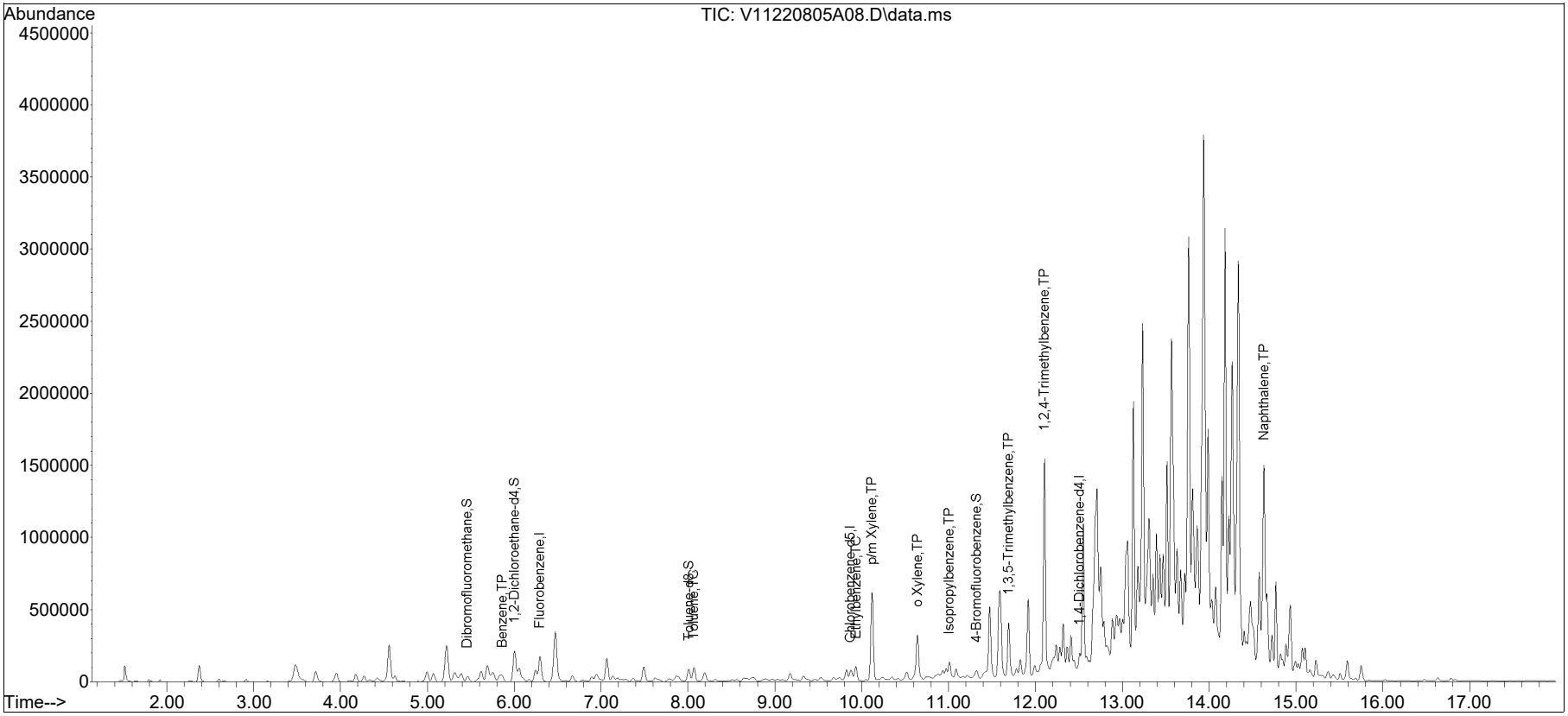
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A08.D
Acq On : 05 Aug 2022 10:13 am
Operator : VOA111:JC
Sample : L2241291-01,31,4.67,5,,B
Misc : WG1672597,ICAL19072
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 05 13:21:07 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•

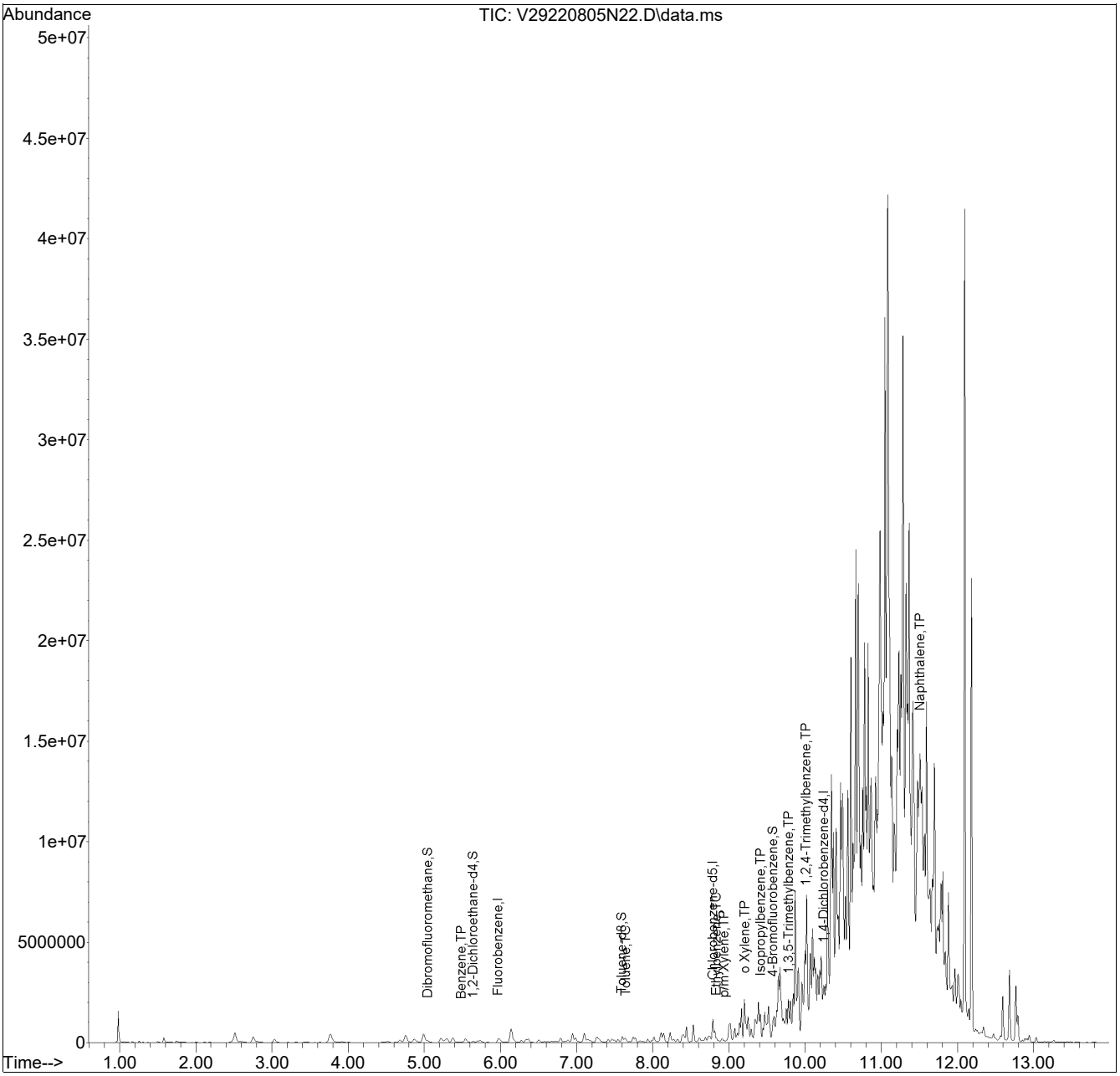


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220805N\
Data File : V29220805N22.D
Acq On : 05 Aug 2022 10:58 pm
Operator : VOA129:AJK
Sample : l2241291-02,31,3.08,5,,c
Misc : WG1672587,ICAL19173
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 07 17:29:18 2022
Quant Method : I:\VOLATILES\VOA129\2022\220805N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05N\V29220805N01.D•

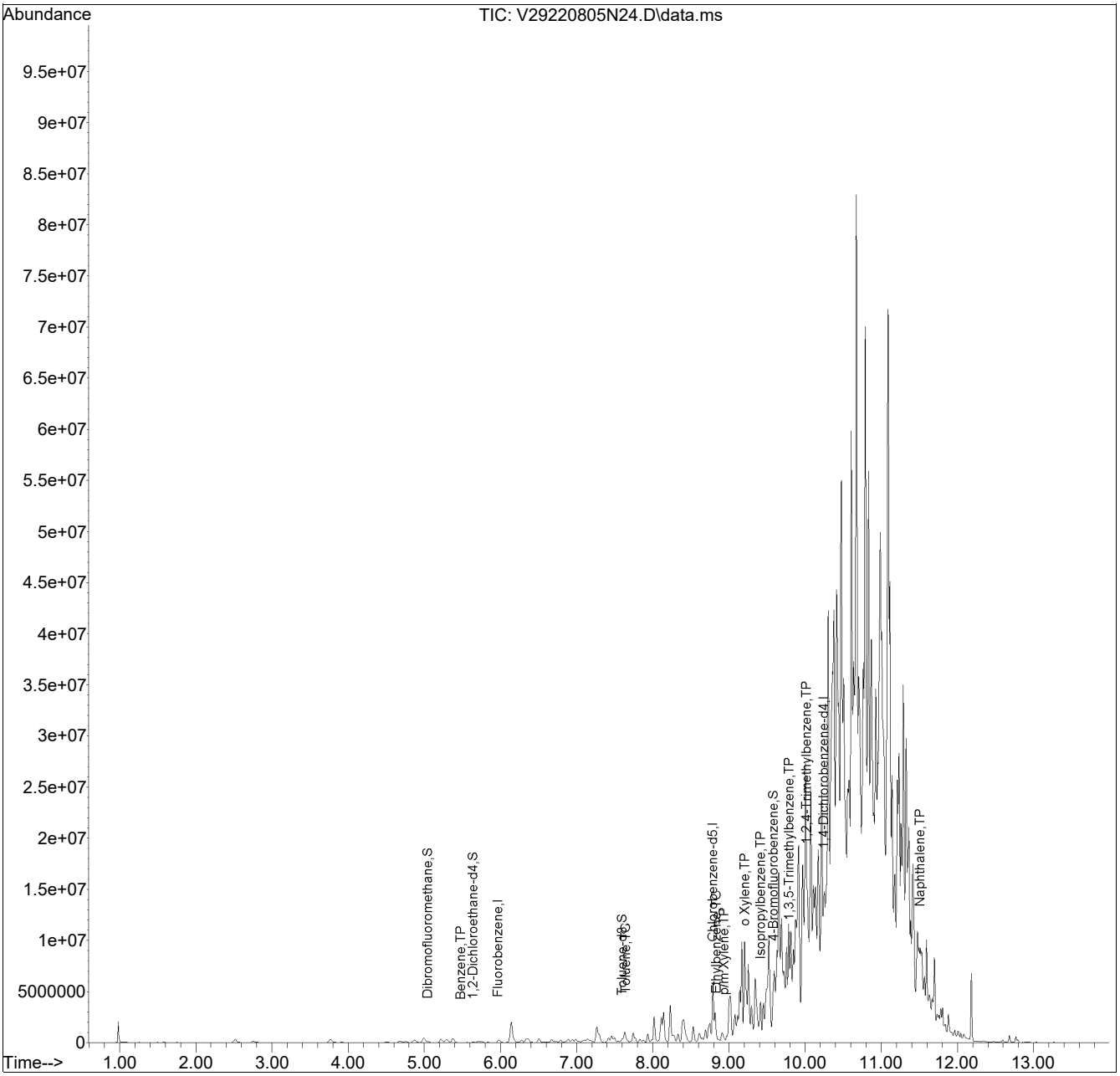


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220805N\
Data File : V29220805N24.D
Acq On : 05 Aug 2022 11:40 pm
Operator : VOA129:AJK
Sample : l2241291-03,31,5.82,5,,c
Misc : WG1672587,ICAL19173
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 07 17:30:50 2022
Quant Method : I:\VOLATILES\VOA129\2022\220805N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05N\V29220805N01.D•

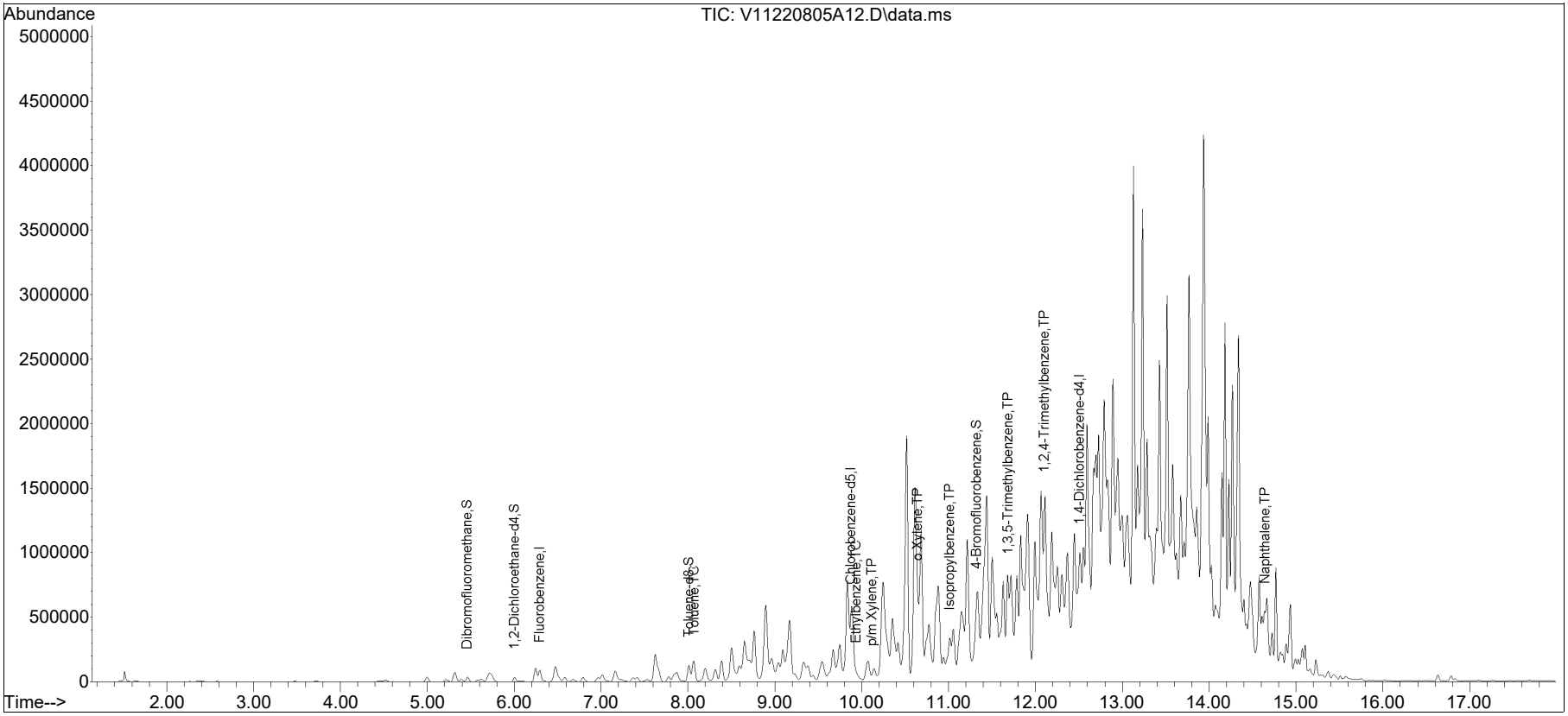


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A12.D
Acq On : 05 Aug 2022 12:00 pm
Operator : VOA111:JC
Sample : L2241291-05D,31H,5.47,5,0.050,,A
Misc : WG1672595,ICAL19072
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 05 13:25:23 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•



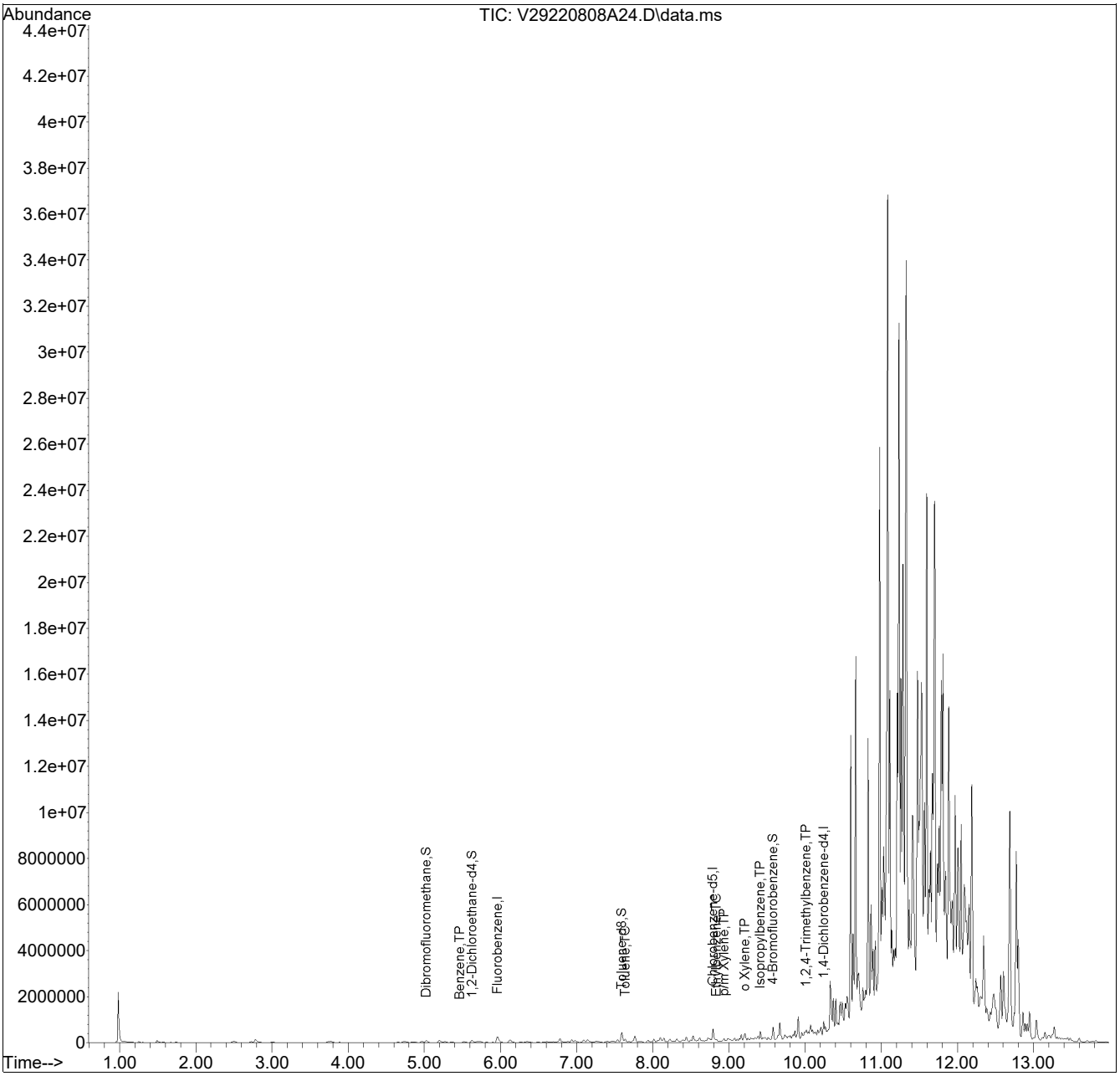
V111_220608A_8260.m Mon Aug 08 14:50:59 2022 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220808A\
Data File : V29220808A24.D
Acq On : 08 Aug 2022 03:30 pm
Operator : VOA129:NLK
Sample : l2241291-06,31,4.87,5,,b
Misc : WG1672815,ICAL19173
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 09 06:29:08 2022
Quant Method : I:\VOLATILES\VOA129\2022\220808A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list08A\V29220808A02.D•

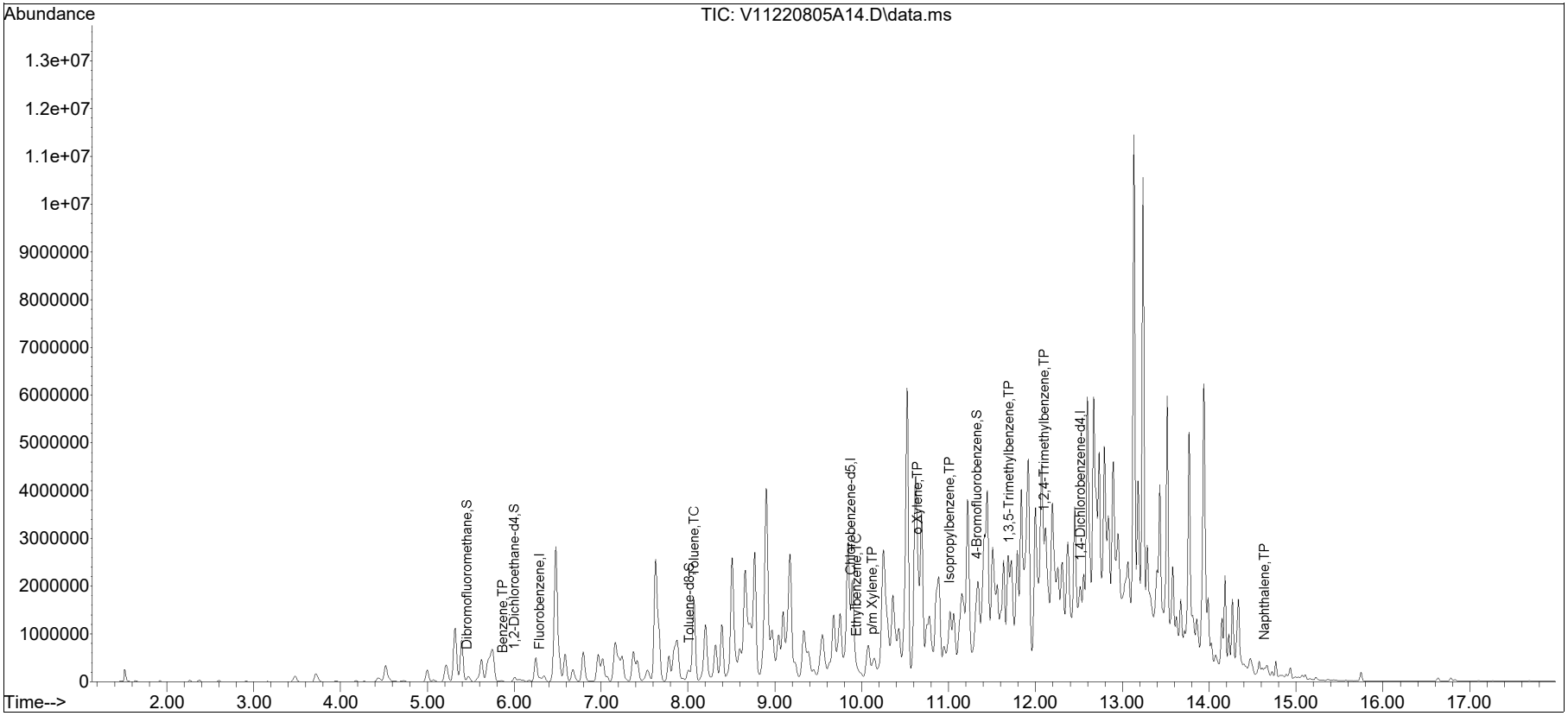


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A14.D
Acq On : 05 Aug 2022 12:53 pm
Operator : VOA111:JC
Sample : L2241291-07,31,5.02,5,,C
Misc : WG1672597,ICAL19072
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 05 13:28:47 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•



V111_220608A_8260.m Mon Aug 08 15:22:39 2022 Page: 2

ANALYTICAL REPORT

Lab Number:	L2241635
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/11/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241635-01	GPR794-01-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:00	08/03/22
L2241635-02	GPR794-02-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:10	08/03/22
L2241635-03	GPR794-03-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:20	08/03/22
L2241635-04	GPR794-04-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:30	08/03/22
L2241635-05	GPR794-05-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:40	08/03/22
L2241635-06	GPR794-06-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:50	08/03/22
L2241635-07	GPR794-07-SS01	SOIL	PHILADELPHIA, PA	08/03/22 12:00	08/03/22
L2241635-08	GPR794-08-SS01	SOIL	PHILADELPHIA, PA	08/03/22 12:10	08/03/22
L2241635-09	GPR1088-04-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:00	08/03/22
L2241635-10	GPR1088-05-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:10	08/03/22
L2241635-11	GPR1088-06-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:20	08/03/22
L2241635-12	DUP-51	SOIL	PHILADELPHIA, PA	08/03/22 00:00	08/03/22
L2241635-13	FB-080322-1	WATER	PHILADELPHIA, PA	08/03/22 14:00	08/03/22
L2241635-14	FB-080322-2	WATER	PHILADELPHIA, PA	08/03/22 14:10	08/03/22
L2241635-15	TB-080322	WATER	PHILADELPHIA, PA	08/03/22 00:00	08/03/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241635-03: The internal standard (IS) responses for chlorobenzene-d5 (48%) and 1,4-dichlorobenzene-d4 (42%) and the surrogate recoveries for 1,2-dichloroethane-d4 (42%) and dibromofluoromethane (51%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis; however, since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. The results of both analyses are reported.

Semivolatile Organics

L2241635-01D, -02D, -04D, -06D, and -08D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Semivolatile Organics by SIM

The WG1672949-1 Method Blank, associated with L2241635-13 and -14, has a concentration above the reporting limit for Phenanthrene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 08/11/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D2
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 08:29
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2200		mg/kg	14	4.8	500
Toluene	3400		mg/kg	29	16.	500
Isopropylbenzene	4000		mg/kg	29	3.1	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:25
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	4.6	0.46	40
Benzene	2300	E	mg/kg	1.2	0.38	40
1,2-Dichloroethane	ND		mg/kg	2.3	0.59	40
Toluene	3000	E	mg/kg	2.3	1.2	40
1,2-Dibromoethane	ND		mg/kg	1.2	0.68	40
Ethylbenzene	74.		mg/kg	2.3	0.32	40
p/m-Xylene	240		mg/kg	4.6	1.3	40
o-Xylene	55.		mg/kg	2.3	0.67	40
Xylenes, Total	300		mg/kg	2.3	0.67	40
Isopropylbenzene	1900	E	mg/kg	2.3	0.25	40
1,3,5-Trimethylbenzene	16.		mg/kg	4.6	0.45	40
1,2,4-Trimethylbenzene	32.		mg/kg	4.6	0.77	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D2
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 08:08
Analyst: NLK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	8.3	0.83	50
Benzene	2400	E	mg/kg	2.1	0.69	50
1,2-Dichloroethane	ND		mg/kg	4.1	1.1	50
Toluene	1200		mg/kg	4.1	2.2	50
1,2-Dibromoethane	ND		mg/kg	2.1	1.2	50
Ethylbenzene	26.		mg/kg	4.1	0.58	50
p/m-Xylene	86.		mg/kg	8.3	2.3	50
o-Xylene	25.		mg/kg	4.1	1.2	50
Xylenes, Total	110		mg/kg	4.1	1.2	50
Isopropylbenzene	2200	E	mg/kg	4.1	0.45	50
1,3,5-Trimethylbenzene	3.9	J	mg/kg	8.3	0.80	50
1,2,4-Trimethylbenzene	8.4		mg/kg	8.3	1.4	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	75		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:46
Analyst: NLK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2800		mg/kg	8.3	2.7	200
Isopropylbenzene	3000		mg/kg	16	1.8	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 09:00
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	0.32	E	mg/kg	0.00045	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00090	0.00023	1
Toluene	0.43	E	mg/kg	0.00090	0.00049	1
1,2-Dibromoethane	ND		mg/kg	0.00045	0.00026	1
Ethylbenzene	0.020		mg/kg	0.00090	0.00013	1
p/m-Xylene	0.060		mg/kg	0.0018	0.00050	1
o-Xylene	0.013		mg/kg	0.00090	0.00026	1
Xylenes, Total	0.073		mg/kg	0.00090	0.00026	1
Isopropylbenzene	1.4	E	mg/kg	0.00090	0.00009	1
1,3,5-Trimethylbenzene	0.0024		mg/kg	0.0018	0.00017	1
1,2,4-Trimethylbenzene	0.0040		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**42**	Q	70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	**51**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:31
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	0.41		mg/kg	0.028	0.0092	1
1,2-Dichloroethane	ND		mg/kg	0.055	0.014	1
Toluene	0.21		mg/kg	0.055	0.030	1
1,2-Dibromoethane	ND		mg/kg	0.028	0.016	1
Ethylbenzene	0.0087	J	mg/kg	0.055	0.0078	1
p/m-Xylene	ND		mg/kg	0.11	0.031	1
o-Xylene	ND		mg/kg	0.055	0.016	1
Xylenes, Total	ND		mg/kg	0.055	0.016	1
Isopropylbenzene	0.38		mg/kg	0.055	0.0060	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.11	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D2
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:52
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	35	3.5	200
Benzene	7000	E	mg/kg	8.7	2.9	200
1,2-Dichloroethane	ND		mg/kg	17	4.4	200
Toluene	5300	E	mg/kg	17	9.4	200
1,2-Dibromoethane	ND		mg/kg	8.7	5.1	200
Ethylbenzene	120		mg/kg	17	2.4	200
p/m-Xylene	430		mg/kg	35	9.7	200
o-Xylene	95.		mg/kg	17	5.0	200
Xylenes, Total	520		mg/kg	17	5.0	200
Isopropylbenzene	9000	E	mg/kg	17	1.9	200
1,3,5-Trimethylbenzene	35.		mg/kg	35	3.3	200
1,2,4-Trimethylbenzene	79.		mg/kg	35	5.8	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:07
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7800		mg/kg	43	14.	1000
Toluene	6100		mg/kg	87	47.	1000
Isopropylbenzene	12000		mg/kg	87	9.4	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05 D2
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:48
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	6.7	0.67	50
Benzene	1700	E	mg/kg	1.7	0.56	50
1,2-Dichloroethane	ND		mg/kg	3.4	0.86	50
Toluene	1200	E	mg/kg	3.4	1.8	50
1,2-Dibromoethane	ND		mg/kg	1.7	0.98	50
Ethylbenzene	31.		mg/kg	3.4	0.47	50
p/m-Xylene	110		mg/kg	6.7	1.9	50
o-Xylene	25.		mg/kg	3.4	0.98	50
Xylenes, Total	140		mg/kg	3.4	0.98	50
Isopropylbenzene	1500	E	mg/kg	3.4	0.36	50
1,3,5-Trimethylbenzene	3.5	J	mg/kg	6.7	0.65	50
1,2,4-Trimethylbenzene	7.7		mg/kg	6.7	1.1	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05 D
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 11:08
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2600		mg/kg	13	4.4	400
Toluene	1800		mg/kg	27	14.	400
Isopropylbenzene	2500		mg/kg	27	2.9	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D2
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:27
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Toluene	4300		mg/kg	59	32.	1000
Isopropylbenzene	4800		mg/kg	59	6.4	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 11:29
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	24	2.4	200
Benzene	2000		mg/kg	5.9	2.0	200
1,2-Dichloroethane	ND		mg/kg	12	3.0	200
Toluene	4700	E	mg/kg	12	6.4	200
1,2-Dibromoethane	ND		mg/kg	5.9	3.4	200
Ethylbenzene	110		mg/kg	12	1.7	200
p/m-Xylene	390		mg/kg	24	6.6	200
o-Xylene	100		mg/kg	12	3.4	200
Xylenes, Total	490		mg/kg	12	3.4	200
Isopropylbenzene	5500	E	mg/kg	12	1.3	200
1,3,5-Trimethylbenzene	23.	J	mg/kg	24	2.3	200
1,2,4-Trimethylbenzene	48.		mg/kg	24	3.9	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07 D2
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:10
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.89	0.090	10
Benzene	130		mg/kg	0.22	0.074	10
1,2-Dichloroethane	ND		mg/kg	0.45	0.11	10
Toluene	8.7		mg/kg	0.45	0.24	10
1,2-Dibromoethane	ND		mg/kg	0.22	0.13	10
Ethylbenzene	1.5		mg/kg	0.45	0.063	10
p/m-Xylene	3.1		mg/kg	0.89	0.25	10
o-Xylene	ND		mg/kg	0.45	0.13	10
Xylenes, Total	3.1		mg/kg	0.45	0.13	10
Isopropylbenzene	250	E	mg/kg	0.45	0.049	10
1,3,5-Trimethylbenzene	0.20	J	mg/kg	0.89	0.086	10
1,2,4-Trimethylbenzene	0.81	J	mg/kg	0.89	0.15	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	79		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	81		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07 D
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 09:42
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	330		mg/kg	2.2	0.24	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D2
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 10:54
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	12000		mg/kg	30	10.	1000
Toluene	6200		mg/kg	60	33.	1000
Isopropylbenzene	7600		mg/kg	60	6.6	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	79		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:04
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	3.0	0.30	25
Benzene	3500	E	mg/kg	0.76	0.25	25
1,2-Dichloroethane	ND		mg/kg	1.5	0.39	25
Toluene	3000	E	mg/kg	1.5	0.82	25
1,2-Dibromoethane	ND		mg/kg	0.76	0.44	25
Ethylbenzene	120		mg/kg	1.5	0.21	25
p/m-Xylene	390		mg/kg	3.0	0.85	25
o-Xylene	86.		mg/kg	1.5	0.44	25
Xylenes, Total	480		mg/kg	1.5	0.44	25
Isopropylbenzene	1600	E	mg/kg	1.5	0.16	25
1,3,5-Trimethylbenzene	15.		mg/kg	3.0	0.29	25
1,2,4-Trimethylbenzene	35.		mg/kg	3.0	0.50	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 16:47
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:24
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 17:10
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-15
Client ID: TB-080322
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:31
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-15
Client ID: TB-080322
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 17:32
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/08/22 17:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 13-15 Batch: WG1672421-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2241635

Project Number: 200.00135.006 **Report Date:** 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 12:23
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-15 Batch: WG1672513-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03 Batch: WG1672815-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02,05-08 Batch: WG1672957-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/22 06:44
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-08 Batch: WG1673529-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	113		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 13-15 Batch: WG1672421-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-15 Batch: WG1672513-3 WG1672513-4								
Methyl tert butyl ether	87		85		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	120		110		70-130	9		20
Ethylbenzene	120		110		70-130	9		20
p/m-Xylene	120		115		70-130	4		20
o-Xylene	110		110		70-130	0		20
Isopropylbenzene	120		110		70-130	9		20
1,3,5-Trimethylbenzene	120		110		64-130	9		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	106		103		70-130
4-Bromofluorobenzene	94		95		70-130
Dibromofluoromethane	101		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03 Batch: WG1672815-3 WG1672815-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02,05-08 Batch: WG1672957-3 WG1672957-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-08 Batch: WG1673529-3 WG1673529-4								
Methyl tert butyl ether	75		75		66-130	0		30
Benzene	86		85		70-130	1		30
1,2-Dichloroethane	75		75		70-130	0		30
Toluene	86		85		70-130	1		30
1,2-Dibromoethane	86		87		70-130	1		30
Ethylbenzene	88		88		70-130	0		30
p/m-Xylene	90		90		70-130	0		30
o-Xylene	89		89		70-130	0		30
Isopropylbenzene	90		88		70-130	2		30
1,3,5-Trimethylbenzene	91		90		70-130	1		30
1,2,4-Trimethylbenzene	92		89		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86		85		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	97		95		70-130
Dibromofluoromethane	89		87		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 13:31
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.5		mg/kg	1.9	0.23	10
Fluorene	2.0		mg/kg	1.9	0.19	10
Phenanthrene	8.7		mg/kg	1.2	0.23	10
Anthracene	0.51	J	mg/kg	1.2	0.38	10
Pyrene	0.71	J	mg/kg	1.2	0.19	10
Benzo(a)anthracene	0.27	J	mg/kg	1.2	0.22	10
Chrysene	0.35	J	mg/kg	1.2	0.20	10
Benzo(b)fluoranthene	ND		mg/kg	1.2	0.32	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.47	10
Benzo(ghi)perylene	ND		mg/kg	1.5	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 20:02
Analyst: JG
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.0	J	mg/kg	2.1	0.26	10
Fluorene	0.47	J	mg/kg	2.1	0.21	10
Phenanthrene	2.9		mg/kg	1.3	0.26	10
Anthracene	ND		mg/kg	1.3	0.42	10
Pyrene	0.86	J	mg/kg	1.3	0.21	10
Benzo(a)anthracene	0.46	J	mg/kg	1.3	0.24	10
Chrysene	0.44	J	mg/kg	1.3	0.22	10
Benzo(b)fluoranthene	0.47	J	mg/kg	1.3	0.36	10
Benzo(a)pyrene	ND		mg/kg	1.7	0.52	10
Benzo(ghi)perylene	ND		mg/kg	1.7	0.25	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 05:34
Analyst: SZ
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.017	1
Phenanthrene	0.037	J	mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.035	1
Pyrene	0.049	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.038	J	mg/kg	0.11	0.020	1
Chrysene	0.038	J	mg/kg	0.11	0.018	1
Benzo(b)fluoranthene	0.065	J	mg/kg	0.11	0.030	1
Benzo(a)pyrene	0.049	J	mg/kg	0.14	0.043	1
Benzo(ghi)perylene	0.030	J	mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	41		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 14:16
Analyst: EK
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.1		mg/kg	1.9	0.23	10
Fluorene	1.0	J	mg/kg	1.9	0.19	10
Phenanthrene	1.9		mg/kg	1.2	0.23	10
Anthracene	0.46	J	mg/kg	1.2	0.38	10
Pyrene	2.0		mg/kg	1.2	0.19	10
Benzo(a)anthracene	0.64	J	mg/kg	1.2	0.22	10
Chrysene	1.4		mg/kg	1.2	0.20	10
Benzo(b)fluoranthene	0.78	J	mg/kg	1.2	0.32	10
Benzo(a)pyrene	0.48	J	mg/kg	1.5	0.47	10
Benzo(ghi)perylene	0.41	J	mg/kg	1.5	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 06:19
Analyst: SZ
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.7		mg/kg	0.20	0.024	1
Fluorene	0.17	J	mg/kg	0.20	0.019	1
Phenanthrene	0.43		mg/kg	0.12	0.024	1
Anthracene	0.070	J	mg/kg	0.12	0.039	1
Pyrene	0.058	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.035	J	mg/kg	0.12	0.022	1
Chrysene	0.033	J	mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.034	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.049	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 14:38
Analyst: EK
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.3		mg/kg	1.9	0.23	10
Fluorene	1.4	J	mg/kg	1.9	0.18	10
Phenanthrene	3.0		mg/kg	1.1	0.23	10
Anthracene	0.67	J	mg/kg	1.1	0.36	10
Pyrene	0.94	J	mg/kg	1.1	0.18	10
Benzo(a)anthracene	0.41	J	mg/kg	1.1	0.21	10
Chrysene	0.35	J	mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	0.36	J	mg/kg	1.1	0.32	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.46	10
Benzo(ghi)perylene	ND		mg/kg	1.5	0.22	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	24		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 04:04
Analyst: SZ
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.054	J	mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.018	1
Phenanthrene	0.19		mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.077	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.027	J	mg/kg	0.11	0.021	1
Chrysene	0.041	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.034	J	mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 15:01
Analyst: EK
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	8.7		mg/kg	2.0	0.24	10
Fluorene	0.75	J	mg/kg	2.0	0.19	10
Phenanthrene	2.3		mg/kg	1.2	0.24	10
Anthracene	ND		mg/kg	1.2	0.39	10
Pyrene	0.28	J	mg/kg	1.2	0.20	10
Benzo(a)anthracene	ND		mg/kg	1.2	0.22	10
Chrysene	ND		mg/kg	1.2	0.21	10
Benzo(b)fluoranthene	ND		mg/kg	1.2	0.34	10
Benzo(a)pyrene	ND		mg/kg	1.6	0.48	10
Benzo(ghi)perylene	ND		mg/kg	1.6	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 11:56
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	84		15-120
4-Terphenyl-d14	90		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 12:13
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	91		15-120
4-Terphenyl-d14	96		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/22 23:47
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-06,08 Batch: WG1671002-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	103		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/22 22:28
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,07 Batch: WG1671945-1					
Naphthalene	ND		mg/kg	0.17	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	56		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 07:35
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-14 Batch: WG1672949-1					
Naphthalene	2.8		ug/l	0.10	0.05
Fluorene	0.06	J	ug/l	0.10	0.01
Phenanthrene	0.07		ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.03	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	86		15-120
4-Terphenyl-d14	92		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06,08 Batch: WG1671002-2 WG1671002-3								
Naphthalene	83		77		40-140	8		50
Fluorene	91		84		40-140	8		50
Phenanthrene	81		76		40-140	6		50
Anthracene	87		80		40-140	8		50
Pyrene	83		76		35-142	9		50
Benzo(a)anthracene	93		87		40-140	7		50
Chrysene	88		84		40-140	5		50
Benzo(b)fluoranthene	113		103		40-140	9		50
Benzo(a)pyrene	114		108		40-140	5		50
Benzo(ghi)perylene	92		87		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	94		84		23-120
2-Fluorobiphenyl	83		77		30-120
4-Terphenyl-d14	99		90		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07 Batch: WG1671945-2 WG1671945-3								
Naphthalene	74		80		40-140	8		50
Fluorene	78		86		40-140	10		50
Phenanthrene	74		84		40-140	13		50
Anthracene	79		88		40-140	11		50
Pyrene	75		80		35-142	6		50
Benzo(a)anthracene	80		90		40-140	12		50
Chrysene	76		82		40-140	8		50
Benzo(b)fluoranthene	93		105		40-140	12		50
Benzo(a)pyrene	98		110		40-140	12		50
Benzo(ghi)perylene	79		92		40-140	15		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		88		23-120
2-Fluorobiphenyl	74		77		30-120
4-Terphenyl-d14	87		92		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-14 Batch: WG1672949-2 WG1672949-3								
Naphthalene	74		83		40-140	11		40
Fluorene	87		91		40-140	4		40
Phenanthrene	91		90		40-140	1		40
Anthracene	93		93		40-140	0		40
Pyrene	90		85		26-127	6		40
Benzo(a)anthracene	100		96		40-140	4		40
Chrysene	105		103		40-140	2		40
Benzo(b)fluoranthene	94		93		40-140	1		40
Benzo(a)pyrene	88		86		40-140	2		40
Benzo(ghi)perylene	107		101		40-140	6		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		99		23-120
2-Fluorobiphenyl	75		82		15-120
4-Terphenyl-d14	86		83		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	408		mg/kg	2.32	0.124	1	08/04/22 23:16	08/09/22 11:35	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	347		mg/kg	2.56	0.138	1	08/04/22 23:16	08/09/22 11:40	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.2		mg/kg	2.20	0.118	1	08/04/22 23:16	08/09/22 11:45	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	63.8		mg/kg	2.34	0.125	1	08/04/22 23:16	08/09/22 11:50	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.6		mg/kg	2.35	0.126	1	08/04/22 23:16	08/09/22 13:17	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	429		mg/kg	2.20	0.118	1	08/04/22 23:16	08/09/22 13:22	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.73		mg/kg	2.21	0.118	1	08/04/22 23:16	08/09/22 13:27	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	132		mg/kg	2.40	0.129	1	08/04/22 23:16	08/09/22 13:32	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 14:59	EPA 3005A	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 15:46	EPA 3005A	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 13-14 Batch: WG1671033-1										
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 14:44	1,6010D	NB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-08 Batch: WG1671440-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/04/22 23:16	08/09/22 10:29	1,6010D	NB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13-14 Batch: WG1671033-2								
Lead, Total	96		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-08 Batch: WG1671440-2 SRM Lot Number: D113-540								
Lead, Total	87		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1671033-3 QC Sample: L2241764-02 Client ID: MS Sample												
Lead, Total	ND	0.53	0.491	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1671440-3 QC Sample: L2241632-02 Client ID: MS Sample												
Lead, Total	10.8	49.6	54.9	89		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1671440-4 QC Sample: L2241632-02 Client ID: DUP Sample						
Lead, Total	10.8	10.1	mg/kg	7		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.3		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.4		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.5		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.6		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-09
Client ID: GPR1088-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 13:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.2		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.2		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-10
Client ID: GPR1088-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 13:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH	8.9	(H)	SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-11
Client ID: GPR1088-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 13:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.3		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.7		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-12
Client ID: DUP-51
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.1		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.1		SU	-	NA	1	-	08/08/22 17:57	1,9040C	AS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.3		SU	-	NA	1	-	08/08/22 17:57	1,9040C	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 13-14 Batch: WG1672434-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 09-12 Batch: WG1672436-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1671234-1 QC Sample: L2241632-01 Client ID: DUP Sample						
Solids, Total	86.6	86.4	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 13-14 QC Batch ID: WG1672434-2 QC Sample: L2241635-13 Client ID: FB-080322-1						
pH (H)	6.1	6.0	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 09-12 QC Batch ID: WG1672436-2 QC Sample: L2242054-01 Client ID: DUP Sample						
pH	9.5	9.8	SU	3		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-01A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-01B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-01C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-01D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-01F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-02A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-02B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-02C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-02D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-02F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-03A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241635-03B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260H(14),PA-8260HLW(14)
L2241635-03C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260H(14),PA-8260HLW(14)
L2241635-03D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-03F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-04A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-04B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-04C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-04D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-04F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-05A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-05B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-05C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-05D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-05F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-06A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-06B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-06C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-06D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-06F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-07A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-07B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-07C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-07D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-07F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-08A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-08B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-08C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-08D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-08F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-09A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-10A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-11A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-12A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-13A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13C	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-13E	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-13F	Plastic 60ml unpreserved	A	7	7	2.7	Y	Absent		PH-9040(1)
L2241635-13G	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		PB-TI(180)
L2241635-13H	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-13I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-14A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14C	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-14E	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-14F	Plastic 60ml unpreserved	A	7	7	2.7	Y	Absent		PH-9040(1)
L2241635-14G	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		PB-TI(180)
L2241635-14H	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-14I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-15A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-15B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-15C	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-15D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/4/22

ALPHA Job #: L2241635

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5-DAY

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

Short list 1-5 | TEG | PH

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Short list 1-5	TEG	PH	Sample Specific Comments
L1635-01	GPR-794-01-5501	8/3/22	1100	S		☑	☑	☐	
-02	GPR-794-02-5501		1110			☑	☑	☐	
-03	GPR-794-03-5501		1120			☑	☑	☐	
-04	GPR-794-04-5501		1130			☑	☑	☐	
-05	GPR-794-05-5501		1140			☑	☑	☐	
-06	GPR-794-06-5501		1150			☑	☑	☐	
-07	GPR-794-07-5501		1200			☑	☑	☐	
-08	GPR-794-08-5501		1210			☑	☑	☐	
-09	GPR-1088-04-5501		1300			☐	☐	☑	
-10	GPR-1088-05-5501		1310			☐	☐	☑	
	Container Type					-	-	G	
	Preservative					-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22 2200	Tom Clark	8/3/22 1508
	8/3/22		8/3 2400
	8/3/22		8/4/22 1:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(FRONT) (rev. 5-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/4/22

ALPHA Job #: L2241635

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

x 5-DAY

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 Short list 1-5	TEG	PH	VOC Portion of SLI-5	EDB (8011)	Sample Specific Comments
L1635-11	GPR-1088-06-5501	8/3/22	1320	S	AM	☒	☒	☒	☐	☐	PH ONLY
-12	DUP-51		—	S		☐	☐	☒	☐	☐	
-13	FB-080322-1		1400	W		☒	☒	☒	☐	☐	
-14	FB-080322-2		1410	W		☒	☒	☒	☐	☐	
-15	TB-080322		—	W		☐	☐	☐	☒	☒	

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22		
Tom Clark	1340		8/3/22 2100
	2100		8/4/22 1:10
	8/3/22		8/4/22 0230

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 8-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

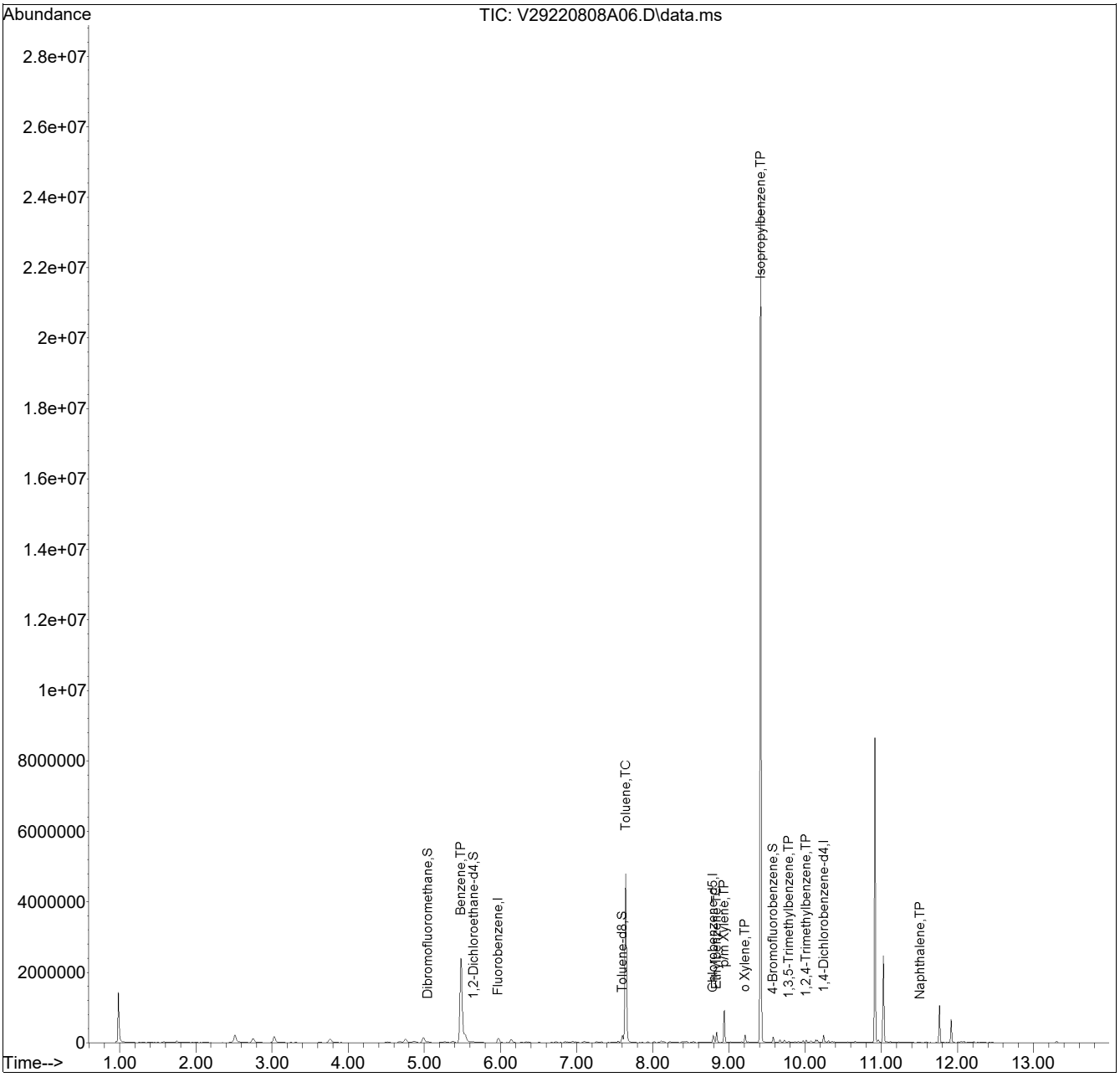
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220808A\
Data File : V29220808A06.D
Acq On : 08 Aug 2022 09:00 am
Operator : VOA129:NLK
Sample : l2241635-03,31,6.09,5,,c
Misc : WG1672815,ICAL19173
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 09 08:30:01 2022
Quant Method : I:\VOLATILES\VOA129\2022\220808A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list08A\V29220808A02.D•



ANALYTICAL REPORT

Lab Number:	L2243874
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/22/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2243874-01	GPU767-01-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:30	08/15/22
L2243874-02	GPU767-02-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:40	08/15/22
L2243874-03	GPU767-03-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:45	08/15/22
L2243874-04	GPU767-04-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:55	08/15/22
L2243874-05	GPU767-05-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:30	08/15/22
L2243874-06	GPU767-06-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:40	08/15/22
L2243874-07	GPU767-07-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:50	08/15/22
L2243874-08	TB-081522	WATER	PHILADELPHIA, PA	08/15/22 00:00	08/15/22
L2243874-09	FB-081522	WATER	PHILADELPHIA, PA	08/15/22 13:45	08/15/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2243874-01: The collection date and time on the chain of custody was 12-AUG-22 12:30; however, the collection date/time on the container label was 15-AUG-22 12:30. At the client's request, the collection date/time is reported as 15-AUG-22 12:30.

L2243874-02: The collection date and time on the chain of custody was 12-AUG-22 12:40; however, the collection date/time on the container label was 15-AUG-22 12:40. At the client's request, the collection date/time is reported as 15-AUG-22 12:40.

L2243874-03: The collection date and time on the chain of custody was 12-AUG-22 12:45; however, the collection date/time on the container label was 15-AUG-22 12:45. At the client's request, the collection date/time is reported as 15-AUG-22 12:45.

L2243874-04: The collection date and time on the chain of custody was 12-AUG-22 12:55; however, the collection date/time on the container label was 15-AUG-22 12:55. At the client's request, the collection date/time is reported as 15-AUG-22 12:55.

L2243874-05: The collection date and time on the chain of custody was 12-AUG-22 13:30; however, the collection date/time on the container label was 15-AUG-22 13:30. At the client's request, the collection date/time is reported as 15-AUG-22 13:30.

L2243874-06: The collection date and time on the chain of custody was 12-AUG-22 13:40; however, the collection date/time on the container label was 15-AUG-22 13:40. At the client's request, the collection date/time is reported as 15-AUG-22 13:40.

L2243874-07: The collection date and time on the chain of custody was 12-AUG-22 13:50; however, the collection date/time on the container label was 15-AUG-22 13:50. At the client's request, the collection date/time is reported as 15-AUG-22 13:50.

L2243874-08: The collection date and time on the chain of custody was 12-AUG-22 00:00; however, the

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Case Narrative (continued)

collection date/time on the container label was 15-AUG-22 00:00. At the client's request, the collection date/time is reported as 15-AUG-22 00:00.
L2243874-09: The collection date and time on the chain of custody was 12-AUG-22 14:00; however, the collection date/time on the container label was 15-AUG-22 14:00. At the client's request, the collection date/time is reported as 15-AUG-22 13:45.

Volatile Organics
L2243874-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (174%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2243874-03: The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis. The results of both analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/22/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 13:08
Analyst: AJK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0028	0.00077	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.0011	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 13:28
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.00035	0.00003	1
Benzene	0.00007	J	mg/kg	0.00008	0.00002	1
1,2-Dichloroethane	ND		mg/kg	0.00018	0.00004	1
Toluene	0.00018		mg/kg	0.00018	0.00009	1
1,2-Dibromoethane	ND		mg/kg	0.00008	0.00005	1
Ethylbenzene	0.00016	J	mg/kg	0.00018	0.00002	1
p/m-Xylene	0.00026	J	mg/kg	0.00035	0.00009	1
o-Xylene	0.00011	J	mg/kg	0.00018	0.00005	1
Xylenes, Total	0.00037	J	mg/kg	0.00018	0.00005	1
Isopropylbenzene	0.0093		mg/kg	0.00018	0.00001	1
1,3,5-Trimethylbenzene	0.00010	J	mg/kg	0.00035	0.00003	1
1,2,4-Trimethylbenzene	0.00027	J	mg/kg	0.00035	0.00005	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**174**	Q	70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 14:10
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.0030		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	0.00091	J	mg/kg	0.00095	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	0.0015		mg/kg	0.00095	0.00013	1
p/m-Xylene	0.00082	J	mg/kg	0.0019	0.00053	1
o-Xylene	0.0010		mg/kg	0.00095	0.00028	1
Xylenes, Total	0.0018	J	mg/kg	0.00095	0.00028	1
Isopropylbenzene	0.42	E	mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	0.00058	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.00089	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/18/22 08:55
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.13	0.014	1
Benzene	0.071		mg/kg	0.034	0.011	1
1,2-Dichloroethane	ND		mg/kg	0.067	0.017	1
Toluene	0.052	J	mg/kg	0.067	0.036	1
1,2-Dibromoethane	ND		mg/kg	0.034	0.020	1
Ethylbenzene	0.030	J	mg/kg	0.067	0.0095	1
p/m-Xylene	0.049	J	mg/kg	0.13	0.038	1
o-Xylene	0.022	J	mg/kg	0.067	0.020	1
Xylenes, Total	0.071	J	mg/kg	0.067	0.020	1
Isopropylbenzene	1.6		mg/kg	0.067	0.0073	1
1,3,5-Trimethylbenzene	0.016	J	mg/kg	0.13	0.013	1
1,2,4-Trimethylbenzene	0.032	J	mg/kg	0.13	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 14:51
Analyst: AJK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.14	0.014	1
Benzene	0.021	J	mg/kg	0.036	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.071	0.018	1
Toluene	0.17		mg/kg	0.071	0.039	1
1,2-Dibromoethane	ND		mg/kg	0.036	0.021	1
Ethylbenzene	0.047	J	mg/kg	0.071	0.010	1
p/m-Xylene	0.14		mg/kg	0.14	0.040	1
o-Xylene	ND		mg/kg	0.071	0.021	1
Xylenes, Total	0.14		mg/kg	0.071	0.021	1
Isopropylbenzene	4.8		mg/kg	0.071	0.0078	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.14	0.014	1
1,2,4-Trimethylbenzene	0.037	J	mg/kg	0.14	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:12
Analyst: AJK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.12	0.012	1
Benzene	0.044		mg/kg	0.029	0.0098	1
1,2-Dichloroethane	ND		mg/kg	0.059	0.015	1
Toluene	0.062		mg/kg	0.059	0.032	1
1,2-Dibromoethane	ND		mg/kg	0.029	0.017	1
Ethylbenzene	0.12		mg/kg	0.059	0.0083	1
p/m-Xylene	0.19		mg/kg	0.12	0.033	1
o-Xylene	0.021	J	mg/kg	0.059	0.017	1
Xylenes, Total	0.21	J	mg/kg	0.059	0.017	1
Isopropylbenzene	22.	E	mg/kg	0.059	0.0064	1
1,3,5-Trimethylbenzene	0.017	J	mg/kg	0.12	0.011	1
1,2,4-Trimethylbenzene	0.075	J	mg/kg	0.12	0.020	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05 D
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/18/22 10:34
Analyst: NLK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	24.		mg/kg	0.24	0.026	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:33
Analyst: AJK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00027	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	0.0010		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:53
Analyst: AJK
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00051	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00058	1
Xylenes, Total	ND		mg/kg	0.0020	0.00058	1
Isopropylbenzene	0.00049	J	mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-08
Client ID: TB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 00:00
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/16/22 16:07
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-08
Client ID: TB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 00:00
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/16/22 09:54
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/16/22 16:14
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.011	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/16/22 10:20
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/16/22 14:34
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 08-09 Batch: WG1675742-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/16/22 08:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1676096-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/17/22 11:11
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,06-07 Batch: WG1676803-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/17/22 11:11
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04-05 Batch: WG1676810-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/18/22 08:27
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 03,05 Batch: WG1677395-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 08-09 Batch: WG1675742-2								
1,2-Dibromoethane	101		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1676096-3 WG1676096-4								
Methyl tert butyl ether	87		97		63-130	11		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		110		70-130	10		20
Toluene	98		99		70-130	1		20
Ethylbenzene	98		99		70-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	92		96		70-130	4		20
1,3,5-Trimethylbenzene	92		95		64-130	3		20
1,2,4-Trimethylbenzene	91		93		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		112		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	92		93		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,06-07 Batch: WG1676803-3 WG1676803-4								
Methyl tert butyl ether	70		70		66-130	0		30
Benzene	88		87		70-130	1		30
1,2-Dichloroethane	90		89		70-130	1		30
Toluene	90		93		70-130	3		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	94		96		70-130	2		30
p/m-Xylene	96		98		70-130	2		30
o-Xylene	95		97		70-130	2		30
Isopropylbenzene	95		98		70-130	3		30
1,3,5-Trimethylbenzene	98		101		70-130	3		30
1,2,4-Trimethylbenzene	99		102		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		91		70-130
Toluene-d8	101		103		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	87		89		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04-05 Batch: WG1676810-3 WG1676810-4								
Methyl tert butyl ether	70		70		66-130	0		30
Benzene	88		87		70-130	1		30
1,2-Dichloroethane	90		89		70-130	1		30
Toluene	90		93		70-130	3		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	94		96		70-130	2		30
p/m-Xylene	96		98		70-130	2		30
o-Xylene	95		97		70-130	2		30
Isopropylbenzene	95		98		70-130	3		30
1,3,5-Trimethylbenzene	98		101		70-130	3		30
1,2,4-Trimethylbenzene	99		102		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		91		70-130
Toluene-d8	100		103		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	87		90		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 03,05 Batch: WG1677395-3 WG1677395-4								
Methyl tert butyl ether	92		97		66-130	5		30
Benzene	91		96		70-130	5		30
1,2-Dichloroethane	92		97		70-130	5		30
Toluene	88		89		70-130	1		30
1,2-Dibromoethane	93		95		70-130	2		30
Ethylbenzene	92		95		70-130	3		30
p/m-Xylene	92		96		70-130	4		30
o-Xylene	94		97		70-130	3		30
Isopropylbenzene	93		95		70-130	2		30
1,3,5-Trimethylbenzene	91		96		70-130	5		30
1,2,4-Trimethylbenzene	91		95		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		102		70-130
Toluene-d8	102		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:08
Analyst: EK
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.037	1
Pyrene	0.032	J	mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.044	J	mg/kg	0.11	0.021	1
Chrysene	0.046	J	mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.10	J	mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.070	J	mg/kg	0.15	0.046	1
Indeno(1,2,3-cd)pyrene	0.077	J	mg/kg	0.15	0.026	1
Benzo(ghi)perylene	0.076	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:31
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.048	J	mg/kg	0.20	0.024	1
Fluorene	0.085	J	mg/kg	0.20	0.019	1
Phenanthrene	0.24		mg/kg	0.12	0.024	1
Anthracene	0.058	J	mg/kg	0.12	0.039	1
Pyrene	0.18		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.12		mg/kg	0.12	0.022	1
Chrysene	0.12		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.15		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.14	J	mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	0.091	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.077	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	34		23-120
2-Fluorobiphenyl	**24**	Q	30-120
4-Terphenyl-d14	25		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:55
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.20	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	ND		mg/kg	0.12	0.020	1
Benzo(a)anthracene	ND		mg/kg	0.12	0.022	1
Chrysene	ND		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.16	0.028	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	44		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 01:18
Analyst: EK
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.024	1
Fluorene	ND		mg/kg	0.19	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.090	J	mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.037	J	mg/kg	0.12	0.022	1
Chrysene	0.093	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.054	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.049	J	mg/kg	0.16	0.047	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.16	0.027	1
Benzo(ghi)perylene	0.064	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 01:41
Analyst: EK
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.022	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	ND		mg/kg	0.11	0.021	1
Chrysene	0.024	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.15	0.026	1
Benzo(ghi)perylene	0.025	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	34		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 02:05
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.068	J	mg/kg	0.18	0.021	1
Fluorene	0.030	J	mg/kg	0.18	0.017	1
Phenanthrene	0.19		mg/kg	0.10	0.021	1
Anthracene	0.053	J	mg/kg	0.10	0.034	1
Pyrene	0.34		mg/kg	0.10	0.017	1
Benzo(a)anthracene	0.33		mg/kg	0.10	0.020	1
Chrysene	0.38		mg/kg	0.10	0.018	1
Benzo(b)fluoranthene	0.56		mg/kg	0.10	0.030	1
Benzo(a)pyrene	0.42		mg/kg	0.14	0.043	1
Indeno(1,2,3-cd)pyrene	0.35		mg/kg	0.14	0.024	1
Benzo(ghi)perylene	0.29		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	117		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 02:28
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.17	0.021	1
Fluorene	ND		mg/kg	0.17	0.017	1
Phenanthrene	ND		mg/kg	0.10	0.021	1
Anthracene	ND		mg/kg	0.10	0.034	1
Pyrene	ND		mg/kg	0.10	0.017	1
Benzo(a)anthracene	ND		mg/kg	0.10	0.019	1
Chrysene	ND		mg/kg	0.10	0.018	1
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.029	1
Benzo(a)pyrene	ND		mg/kg	0.14	0.042	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.14	0.024	1
Benzo(ghi)perylene	ND		mg/kg	0.14	0.020	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	77		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/22 16:24
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/21/22 08:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.06	J	ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	83		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/19/22 21:24
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1676057-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	32		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/22 16:07
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/21/22 08:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09 Batch: WG1677772-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02
Chrysene	0.02	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1676057-2 WG1676057-3								
Naphthalene	58		56		40-140	4		50
Fluorene	61		60		40-140	2		50
Phenanthrene	58		58		40-140	0		50
Anthracene	60		59		40-140	2		50
Pyrene	62		63		35-142	2		50
Benzo(a)anthracene	58		57		40-140	2		50
Chrysene	57		56		40-140	2		50
Benzo(b)fluoranthene	58		58		40-140	0		50
Benzo(a)pyrene	58		58		40-140	0		50
Indeno(1,2,3-cd)pyrene	67		66		40-140	2		50
Benzo(ghi)perylene	59		58		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	89		86		23-120
2-Fluorobiphenyl	63		62		30-120
4-Terphenyl-d14	65		68		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09 Batch: WG1677772-2 WG1677772-3								
Naphthalene	73		86		40-140	16		40
Fluorene	78		92		40-140	16		40
Phenanthrene	79		89		40-140	12		40
Anthracene	79		87		40-140	10		40
Pyrene	79		86		26-127	8		40
Benzo(a)anthracene	89		90		40-140	1		40
Chrysene	81		94		40-140	15		40
Benzo(b)fluoranthene	77		92		40-140	18		40
Benzo(a)pyrene	73		80		40-140	9		40
Indeno(1,2,3-cd)pyrene	98		102		40-140	4		40
Benzo(ghi)perylene	93		98		40-140	5		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		94		23-120
2-Fluorobiphenyl	68		80		15-120
4-Terphenyl-d14	75		84		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	380		mg/kg	2.20	0.118	1	08/16/22 21:25	08/22/22 13:00	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	115		mg/kg	2.30	0.123	1	08/16/22 21:25	08/22/22 13:10	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	72.0		mg/kg	2.30	0.123	1	08/16/22 21:25	08/22/22 13:15	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	121		mg/kg	2.22	0.119	1	08/16/22 21:25	08/22/22 13:21	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.5		mg/kg	2.23	0.120	1	08/16/22 21:25	08/22/22 13:26	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	688		mg/kg	2.05	0.110	1	08/16/22 21:25	08/22/22 14:22	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.0		mg/kg	2.01	0.108	1	08/16/22 21:25	08/22/22 14:27	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/16/22 21:25	08/19/22 14:40	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1675792-1										
Lead, Total	0.117	J	mg/kg	2.08	0.112	1	08/16/22 21:25	08/22/22 10:48	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 09 Batch: WG1675903-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	08/16/22 21:25	08/19/22 14:04	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1675792-2 SRM Lot Number: D113-540								
Lead, Total	98		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 09 Batch: WG1675903-2								
Lead, Total	107		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1675792-3 QC Sample: L2243899-05 Client ID: MS Sample												
Lead, Total	1330	45	288	**0**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 09 QC Batch ID: WG1675903-3 QC Sample: L2243874-09 Client ID: FB-081522												
Lead, Total	ND	530	623.7	118		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1675792-4 QC Sample: L2243899-05 Client ID: DUP Sample						
Lead, Total	1330	1110	mg/kg	18		20
Total Metals - Mansfield Lab Associated sample(s): 09 QC Batch ID: WG1675903-4 QC Sample: L2243874-09 Client ID: FB-081522						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.9		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.5		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.8		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.3		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.2		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1675702-1 QC Sample: L2243849-01 Client ID: DUP Sample						
Solids, Total	86.0	87.7	%	2		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-01A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-01B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-01C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-01D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-01E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-01F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-02A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-02B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-02C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-02D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-02E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-02F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-03A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2243874-03B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260H(14),PA-8260HLW(14)
L2243874-03C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260H(14),PA-8260HLW(14)
L2243874-03D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-03E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-03F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-04A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-04B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-04C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-04D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-04E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-04F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-05A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-05B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-05C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-05D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-05E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-05F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-06A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-06B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-06C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-06D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-06E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-06F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-07A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-07B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-07C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-07D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-07E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-07F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-08A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-08B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-08D	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-08E	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-09A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09D	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-09E	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-09F	Plastic 250ml HNO3 preserved	B	<2	<2	3.2	Y	Absent		PB-6020T-PPB(180)
L2243874-09G	Amber 250ml unpreserved	B	NA		3.2	Y	Absent		PA-PAHSIM-LVI(7)
L2243874-09H	Amber 250ml unpreserved	B	NA		3.2	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/16/22

ALPHA Job #: L2243874

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~18599~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-6 | EDB (8-11) | VC PETRO + FSL

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
43874-01	GPU767-01-5501	8/12	1230	S	TS		
02	GPU767-02-5501		~~1230~~ 1235			1240	
03	GPU767-03-5501		1745				
04	GPU767-04-5501		~~1245~~ 1245			1255	
05	GPU767-05-5501		1330				
06	GPU767-06-5501		1340				
07	GPU767-07-5501		1350				
08	TB-081522		—				
09	FB-081522		1900				

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/15 1350		8/15/22 1350
	8/15/22 1535		8/15 1800
	8/15 2101		8/15/22 2100
	8/15/22		8/15/22 2700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

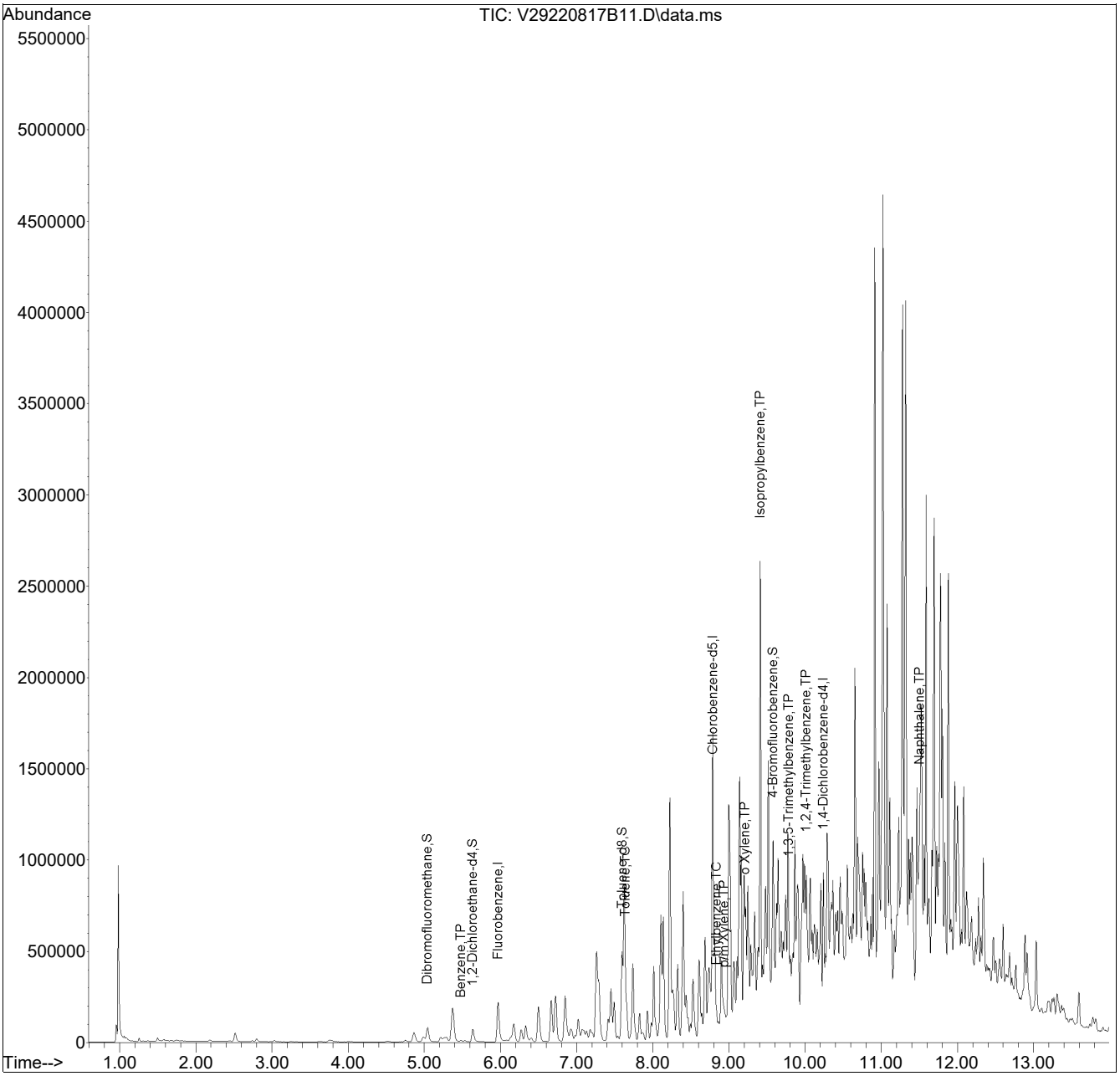
FORM NO: 01-01(G) (rev. 9-Mar-12)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220817B\
Data File : V29220817B11.D
Acq On : 17 Aug 2022 01:28 pm
Operator : VOA129:AJK
Sample : l2243874-02,31,34.63,5,,b
Misc : WG1676803,ICAL19173
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 18 09:27:42 2022
Quant Method : I:\VOLATILES\VOA129\2022\220817B\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list17B\V29220817B01.D•



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

51-33624
Facility I.D.

Former Philadelphia Refinery Point Breeze - Tank Group 6
Facility Name

Philadelphia — Municipality
Philadelphia — County

June 14, 2023
Date Prepared

Kevin L. Long
Name of Person Submitting Report
(Please Print)

Terraphase Engineering Inc.
Company Name
(If Applicable)

Principal Consultant
Title

Closure Method (Check all that apply):

- ☒ AST Removal
- ☐ AST Closure-In-Place
- ☐ AST Change-In-Service

Site Assessment Results (Check all that apply):

- ☒ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☒ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☒ Obvious, Localized Contamination - Sample Results Meet Standards/Levels
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☐ Obvious, Extensive Contamination

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

DATE RECEIVED: _____

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing aboveground storage tank systems may use this form to demonstrate that a storage tank system closure was performed in accordance with technical guidance document 263-4200-001 "Closure Requirements for Aboveground Storage Tank Systems". PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 51-33624
2. Facility Name Former Philadelphia Refinery Point Breeze - Tank Group 6
3. Facility County Philadelphia
4. Facility Municipality Philadelphia
5. Facility Address 3144 West Passyunk Avenue
6. Facility Contact Person Anne R. Garr
7. Facility Telephone Number (312) 796-6564
8. Owner Name Philadelphia Energy Solutions Refining and Marketing LLC
9. Owner Mailing Address 111 S. Wacker Dr., Ste 3000
10. Description of Aboveground Storage Tank Systems (Complete for each tank system closed)

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		- -	- -	- -	- -
Description of Aboveground Storage Tank System (Complete for each tank system undergoing closure)					
DEP Tank ID Number		See attached Table			
Total Capacity (Gallons)					
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☐	☐	☐	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Pure Ethanol	☐	☐	☐	☐
	Blended Ethanol _____%	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Biodiesel _____%	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Nonpetroleum Oil, Specify	_____	_____	_____	_____
	Other, Specify	_____	_____	_____	_____
NOTE: If Hazardous Substance Block is Checked, Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance	_____	_____	_____	_____
	AND				
	Chemical Abstract Service (CAS) No.	_____	_____	_____	_____
	c. Unknown	☐	☐	☐	☐

CLOSURE METHOD(s): DEP Tank ID Number:					
Partial Storage Tank System Closure		☐	☐	☐	☐
Tank ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Piping ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Dispenser ☐ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Other _____	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐

Describe Closure Activities:

The tanks and associated piping were evacuated of any sale-able product, which was consolidated / bulked and eventually sold. All materials were either transferred to a slop oil tank through existing piping at the facility or via vacuum truck. When feasible the lines were drained back to the tank, and any product removed using a vacuum truck and stored with the other bulked products for future sale. The associated piping was then cleaned using copious amounts of water, high pressure water and /or purged with air or an inert gas such as nitrogen. Some heavy oil lines were flushed using cutter stock before using water. When required, a thermal Oxidizer was utilized to reduce the LEL inside the tank prior to opening and performing Confined Space Entry for cleaning. When necessary or prudent tanks and/or piping were also purged by pulling the internal atmosphere through activated carbon. Once the piping was cleaned, verification was conducted via a physical walk-down of the system, and painting valves and piping green as each was confirmed to be open and empty. The piping and utilities were then air gapped by the mechanical contractor (Nooter). Air gapping was followed by the simultaneous removal of the piping system and the cleaning the interior of the tank. Interior cleaning was conducted by one of three subcontracted industrial services companies (ACV Enviro, MPW, EISCO) and included when necessary the removal of floating roof seals (EFR/IFR). Pontoons were also inspected prior to demolition and if found to contain free product, they were evacuated andthe product consolidated with the other like products stored for future sale. All cleaning water and rinsates were collected via vacuum truck and water was decanted at the wash pad leading to the the on-site WWTPs. The remaining sludges and tank bottoms were stabilized with water absorbing polymers and or organic products such as kiln dried sawdust to ensure no free liquids in transit. The material was then loaded into intermodal containers (maximum 24 tons per container and 6 containers per rail car), placed on rail cars. Bills of lading were generated and sent to the railroad to schedule for pickup. The material was managed under 40 CFR 261.4(a)(24) verified recycling exemption and transported by rail to CWM in Sulphur, LA. Upon completion of the cleaning process the tanks and any remaining piping were dismantled, loaded into scrap recycling trucks and/or containers weighed at the facility scale and transported to a local scrap recycling company.

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of the storage tank systems:**

    Tank Group 06 was located in the west-central portion of the Former Philadelphia Refinery Complex.

    The tanks in the group held a variety of materials associated with the petroleum refining process.

☒ ☐ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ ☐ 13. Original, color photographs of the closure process involving any excavation are attached (i.e., inside of excavation/piping runs, pit water, containment structure and foundation showing condition).

☒ ☐ 14. An amended “Storage Tanks Registration/Permitting Application” Form was submitted to the DEP, Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: 03 / 30 / 2022

☒ ☐ 15. If a release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: 01 / 04 / 2023 Office: Southeast

Yes **N/A**

☒ ☐ 16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable product was drained from the tanks prior to cleaning and transferred to other on-site storage tanks. The useable product was consolidated and sold. Any residual product was discharged to the on-site process sewer and wastewater treatment system.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
All tank bottoms to include sediments, sludges containing recoverable oil were managed in accordance with 40 CFR261.4(a)24. When shipped by rail to CWM in Sulphur, LA, the material was solidified using organic agents such as kilndried sawdust to ensure no free liquid during trasnsit, then placed into Inter-modal containers, loaded onto railcars, properly placarded and BOL's were generated and provided to the railroad. When transported to SAREX in West Deptford, NJ, the material was transporterd via vacuum truck and managed under the same exemption 40 CFR 261.4(a)(24). Any wastewater generated from cleaning was treated through the onsite waste water treatment plants (NPDES Permit #s 0012629 (Point Breeze) and 0011533 (Girard Point). Generator ID # PAD 0497910-98

c. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: PAD049791098

(2) Licensed Hazardous Waste Transporter Name and ID Number: Dana Transport, HW ID #40106; Chemical Waste Management - LA 0000777201, BNSF Railway Company - LA 000147272

☐ ☒ 17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning:

b. If tank contents were determined/deemed to be hazardous waste, provide:

(1) Generator ID Number:

(2) Licensed Hazardous Waste Transporter Name and ID Number:

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
All tanks and associated piping were cleaned, demolished and recycled for scrap value. Pipe and tank scrap was not segregated for transportation to the scrap facility; therefore, a specific quantity of piping or, tank scrap was not detailed in disposal documentation.

☐ ☒ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount _____ (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

Yes **N/A**

☐ ☒ 20. Briefly describe the disposition of and amount _____ (tons) of uncontaminated soil and debris (attach analyses):

☐ ☒ 21. If the tanks were "Closed-in-Place" provide information below:

a. Briefly describe the tank cleaning process: _____

b. If subcontracted, name and address of company that performed the tank cleaning:

c. How were tanks marked/labeled with permanent closure date: _____

I, Philadelphia Energy Solutions Refining and Marketing LLC, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating
(Print Name)
to unsworn falsification to authorities) that I am the owner of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Anne R. Garr, Assistant Secretary of Philadelphia Energy Solutions Refining and Marketing LLC

Signature of Tank Owner

6 /29 /2023
Date

Philadelphia Energy Solutions Refining and Marketing LLC

Company Name
(If applicable)

Assistant Secretary

Title

Section I - Table 1
Description of Aboveground Storage Tank System

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		3/9/2022	3/9/2022	7/6/2022	5/31/2022	5/5/2022	4/6/2022	5/2/2022	3/9/2022	9/9/2022	7/7/2022	5/25/2023	5/10/2022	4/19/2022	5/13/2022
Description of Aboveground Storage Tank System		(Complete for each tank system undergoing closure)													
DEP Tank ID Number		049A	050A	011A	066A	028A	023A	027A	021A	022A	047A	003A	004A	025A	026A
Total Capacity (Gallons)		126,000	126,000	158,240	53,004	3,045,000	3,045,000	3,045,000	3,078,012	3,045,000	84,000	3,385,200	3,385,200	3,385,200	3,385,200
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**														
	Unleaded Gasoline														
	Leaded Gasoline														
	Aviation Gasoline														
	Pure Ethanol														
	Blended Ethanol _____%														
	Kerosene														
	Jet Fuel														
	Diesel Fuel														
	Biodiesel _____%														
	Fuel Oil No. 1														
	Fuel Oil No. 2														
	Fuel Oil No. 4														
	Fuel Oil No. 5														
	Fuel Oil No. 6														
	New Motor Oil														
	Used Motor Oil														
	Nonpetroleum Oil, Specify														
	Other, Specify	#6 Fuel Oil	Alkyl Slurry	Caustic, Fresh	Caustic, Fresh	Heavy Naphtha	Light Naphtha	Light Naphtha	Recovered Oil	Recovered Oil	Recovered Oil	Vacuum Gas Oil	Vacuum Gas Oil	Vacuum Gas Oil	Vacuum Gas Oil
NOTE: If Hazardous Substance Block is Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**														
	Name of Principal														
	CERCLA Substance														
	AND														
	Chemical Abstract Service (CAS) No.														
	c. Unknown														
CLOSURE METHOD(s):	DEP Tank ID Number:	049A	050A	011A	066A	028A	023A	027A	021A	022A	047A	003A	004A	025A	026A
Partial Storage Tank System Closure															
Tank ☐ N/A	a. Removal	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	b. Closure-in-Place														
	c. Change-in-Service														
Piping ☐ N/A	a. Removal	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	b. Closure-in-Place														
	c. Change-in-Service														
Dispenser ☑ N/A	a. Removal														
	b. Closure-in-Place														
	c. Change-in-Service														
Other _____	a. Removal														
	b. Closure-in-Place														
	c. Change-in-Service														

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 51 - 33624
DEP Tank ID Number(s) 049A, 050A, 011A, 066A, 028A, 023A, 027A, 021A, 022A, 047A ,003A, 004A, 025A, 026A

Yes N/A

1. Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil and debris:

   Removed tank and piping debris was segregated and loaded into roll-off containers during demolition. Soil excavation was not completed at the time of AST removal.

2. Briefly describe the method of piping system closure and the closure of the piping systems including the quantity and condition of the piping:

   All the pertinent tank and piping system locations requiring sampling for closure purposes were documented, cleaned, demolished, and recycled for scrap value. In some cases, air gapping and removal of tank system piping prior to the demo of the tank was conducted. No problems or issues concerning the condition of the piping systems were reported.

3. Briefly describe the condition of the tanks and any problems encountered during tank handling or tank removal activities:

   None reported.

4. Briefly describe the method used to purge the tanks of and monitor for hazardous or explosive vapors:

   Vapors were monitored via a LEL meter. The tanks and associated piping were evacuated of any sale-able product and then cleaned using copious amounts of water, high pressure water and /or purged with air or an inert gas such as nitrogen. Some heavy oil lines were flushed using cutter stock before using water. When required, a thermal oxidizer was utilized to reduce the LEL inside the tank prior to opening and performing Confined Space Entry for cleaning. When necessary or prudent tanks and/or piping were also purged by pulling the internal atmosphere through activated carbon.

☒ ☐ 5. If tanks were cleaned on-site:

   a. Briefly describe the tank cleaning process: The subcontracted companies used to clean tanks were ACV ENVIRO, EISCO, and MPW. Tanks were drained, cut open, rinsed and scrubbed clean of any residuals before demolition. See additional detail on page 3.

   b. If subcontracted, name and address of company that performed the tank cleaning:

      NorthStar Contracting Group, Inc., 2250 East Adams Avenue, Philadelphia, PA 19124
      ACV Enviro, 2527 Market Street, Aston PA 19014
      EISCO, 288 Oak Grove Road, Swedesboro, NJ 08085
      MPW, 9711 Lancaster Road SE, Hebron, OH 43025

☐ ☒ 6. If tanks were “Closed-in-Place”, briefly describe how tanks were rendered inoperative, marked permanently closed with date, vented and secured to prevent unauthorized entry:

☒ ☐ 7. If contamination was suspected or observed, the "Notification of Contamination" form was submitted.

I, Brian Garner (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the certified remover who performed the tank handling activities associated with the closure of the above referenced storage tank(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Remover

6 /28/ 2023
Date

5341
Remover Certification Number

1631
Company Certification Number

AST Construction
Company Name

5 Canal e Drive
Street

Egg Harbor Twp NJ 08234
City/Town, State, Zip

609 277 7101
Phone

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 021A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ------→ Conduct confirmatory sampling ------→ See end of this section for options on submission and maintenance of closure records ------→ Do not complete item C.2. below.

☐ YES ------→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 3 - 021A (GP R 270)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR270-01	GPR270-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.087	0.22	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.054	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.11	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.22	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Anthracene	SW8270E	Soil	2.7	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Benzene	SW8260D	Soil	0.036	0.054	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	3.2	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	3.1	0.2	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	3.7	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	2.2	0.2	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Chrysene	SW8270E	Soil	3.6	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Cumene	SW8260D	Soil	0.048	0.11	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.051	0.11	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Fluorene	SW8270E	Soil	2.1	0.25	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Lead	SW6010D	Soil	341	3.01	12/8/2022	12/10/2022
GPR270-01	GPR270-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.22	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	15	1.3	12/8/2022	12/15/2022
GPR270-01	GPR270-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	5.8	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Pyrene	SW8270E	Soil	6.1	0.15	12/8/2022	12/11/2022
GPR270-01	GPR270-01-SS01	4.5	5	Toluene	SW8260D	Soil	0.8	0.11	12/8/2022	12/12/2022
GPR270-01	GPR270-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.185	0.22	12/8/2022	12/12/2022
GPR270-03	GPR270-03-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260D	Soil	0.12	0.23	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	1,2-Dibromoethane	SW8260D	Soil	ND	0.057	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	1,2-Dichloroethane	SW8260D	Soil	ND	0.11	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260D	Soil	0.034	0.23	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Anthracene	SW8270E	Soil	5.3	0.15	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Benzene	SW8260D	Soil	0.061	0.057	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Benzo(a)anthracene	SW8270E	Soil	4.8	0.15	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Benzo(a)pyrene	SW8270E	Soil	2.9	0.2	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Benzo(b)fluoranthene	SW8270E	Soil	3.3	0.15	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270E	Soil	1.4	0.2	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Chrysene	SW8270E	Soil	5.4	0.15	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Cumene	SW8260D	Soil	0.21	0.11	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Ethyl Benzene	SW8260D	Soil	0.075	0.11	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Fluorene	SW8270E	Soil	6	0.25	12/8/2022	12/11/2022
GPR270-03	GPR270-03-SS01	3.5	4	Lead	SW6010D	Soil	450	3.05	12/8/2022	12/10/2022
GPR270-03	GPR270-03-SS01	3.5	4	Methyl tert-butyl ether	SW8260D	Soil	ND	0.23	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Naphthalene	SW8270E	Soil	10	1.2	12/8/2022	12/15/2022
GPR270-03	GPR270-03-SS01	3.5	4	Phenanthrene	SW8270E	Soil	23	0.75	12/8/2022	12/15/2022
GPR270-03	GPR270-03-SS01	3.5	4	Pyrene	SW8270E	Soil	13	0.75	12/8/2022	12/15/2022
GPR270-03	GPR270-03-SS01	3.5	4	Toluene	SW8260D	Soil	0.96	0.11	12/8/2022	12/14/2022
GPR270-03	GPR270-03-SS01	3.5	4	Xylenes (total)	SW8260D	Soil	0.249	0.23	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.13	0.26	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.066	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.13	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.035	0.26	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Anthracene	SW8270E	Soil	4.7	0.17	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Benzene	SW8260D	Soil	0.064	0.066	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	4.4	0.17	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	2.8	0.22	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	3.5	0.17	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	1.4	0.22	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Chrysene	SW8270E	Soil	4.8	0.17	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Cumene	SW8260D	Soil	0.27	0.13	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	0.075	0.13	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Fluorene	SW8270E	Soil	5.4	0.28	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Lead	SW6010D	Soil	537	3.42	12/8/2022	12/10/2022
GPR270-07	GPR270-07-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.26	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Naphthalene	SW8270E	Soil	9.1	0.28	12/8/2022	12/11/2022
GPR270-07	GPR270-07-SS01	4	4.5	Phenanthrene	SW8270E	Soil	20	0.84	12/8/2022	12/15/2022
GPR270-07	GPR270-07-SS01	4	4.5	Pyrene	SW8270E	Soil	12	0.84	12/8/2022	12/15/2022
GPR270-07	GPR270-07-SS01	4	4.5	Toluene	SW8260D	Soil	0.99	0.13	12/8/2022	12/14/2022
GPR270-07	GPR270-07-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	0.283	0.26	12/8/2022	12/14/2022
GPR270-08	GPR270-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0024	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00059	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0012	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0024	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Anthracene	SW8270E	Soil	ND	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00059	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.045	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	ND	0.18	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	ND	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	ND	0.18	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Chrysene	SW8270E	Soil	0.037	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0012	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0012	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Fluorene	SW8270E	Soil	ND	0.23	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Lead	SW6010D	Soil	14.9	2.85	12/8/2022	12/10/2022
GPR270-08	GPR270-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0024	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	ND	0.23	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.053	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Pyrene	SW8270E	Soil	0.054	0.14	12/8/2022	12/11/2022
GPR270-08	GPR270-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0012	12/8/2022	12/12/2022
GPR270-08	GPR270-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0024	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.001	0.0029	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00073	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0015	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00032	0.0029	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Anthracene	SW8270E	Soil	4.6	0.13	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00073	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	4.8	0.13	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	3.2	0.18	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	4	0.13	12/8/2022	12/11/2022

Table 3 - 021A (GP R 270)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR270-09	GPR270-09-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.6	0.18	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Chrysene	SW8270E	Soil	4.9	0.13	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Cumene	SW8260D	Soil	0.00073	0.0015	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00026	0.0015	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Fluorene	SW8270E	Soil	5	0.22	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Lead	SW6010D	Soil	400	2.62	12/8/2022	12/10/2022
GPR270-09	GPR270-09-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	0.0014	0.0029	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Naphthalene	SW8270E	Soil	7.7	0.22	12/8/2022	12/11/2022
GPR270-09	GPR270-09-SS01	4.5	5	Phenanthrene	SW8270E	Soil	13	0.67	12/8/2022	12/15/2022
GPR270-09	GPR270-09-SS01	4.5	5	Pyrene	SW8270E	Soil	11	0.67	12/8/2022	12/15/2022
GPR270-09	GPR270-09-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0015	12/8/2022	12/12/2022
GPR270-09	GPR270-09-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00225	0.0029	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00098	0.0035	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00087	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00049	0.0035	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Anthracene	SW8270E	Soil	2.9	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00087	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.1	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.8	0.21	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.9	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	3.5	0.21	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Chrysene	SW8270E	Soil	2.4	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Cumene	SW8260D	Soil	0.0033	0.0017	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.0006	0.0017	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Fluorene	SW8270E	Soil	1.2	0.26	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Lead	SW6010D	Soil	589	3.04	12/8/2022	12/10/2022
GPR270-11	GPR270-11-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0035	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Naphthalene	SW8270E	Soil	20	1.3	12/8/2022	12/15/2022
GPR270-11	GPR270-11-SS01	4.5	5	Phenanthrene	SW8270E	Soil	5.7	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Pyrene	SW8270E	Soil	2.7	0.16	12/8/2022	12/11/2022
GPR270-11	GPR270-11-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR270-11	GPR270-11-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00329	0.0035	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00069	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Anthracene	SW8270E	Soil	0.091	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00069	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.32	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.32	0.16	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.42	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.2	0.16	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Chrysene	SW8270E	Soil	0.37	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Fluorene	SW8270E	Soil	0.046	0.2	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Lead	SW6010D	Soil	215	2.36	12/8/2022	12/10/2022
GPR270-13	GPR270-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.03	0.2	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.31	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Pyrene	SW8270E	Soil	0.42	0.12	12/8/2022	12/11/2022
GPR270-13	GPR270-13-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR270-13	GPR270-13-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022

Notes:
ND -- Not Detected
SS -- Soil Sample

GP R 271

GP 274

GP 1068

GP 1066

GP 1067

GP 75A

GP 76A

GPR270-01

GPR270-03

GPR270-07

GPR270-09

GPR270-08

GP R 270

GPR270-11

GPR270-13

GP R 273

Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- Associated Piping
- PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 021A (GP R 270)

Figure 3

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 3 - 021A (GP R 270).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 021A (GP R 270) during demolition.

Photograph 2:

View of Tank 021A (GP R 270) during demolition.

Photograph 3:

View of piping removal at Tank 021A (GP R 270) during demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5120103.

Load Ticket: 18732

Date: 03-04-22

Scrap

Sold to: EMR

Location: Tank 770

Carrier: EMR

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #: _____

Gross Weight: 69780 lbs

Tare Weight: 41500 lbs

Net Weight: 28280 lbs

NorthStar Rep. Signature: CE

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location: _____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility: _____

Carrier: _____

Truck #: _____

Container #: _____

Manifest #: _____

Profile / Approval #: _____

Scale Info

Scale Ticket #: _____

Gross Weight: _____

Tare weight: _____

Net weight: _____

Net Kilogram Conversion (PCB Only): _____

NorthStar Rep. Signature: _____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20034741
Date: 03/04/2022 7:56 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 130659.261
Loads: 8515

DT357849-129 - EMR TRUCK 357849 W/TRAILER 129
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	14.14 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	69780.00	41500.00	28280.00

03-04-2022 07:57:4
18732

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 022A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See summary in figure section below							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.
N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

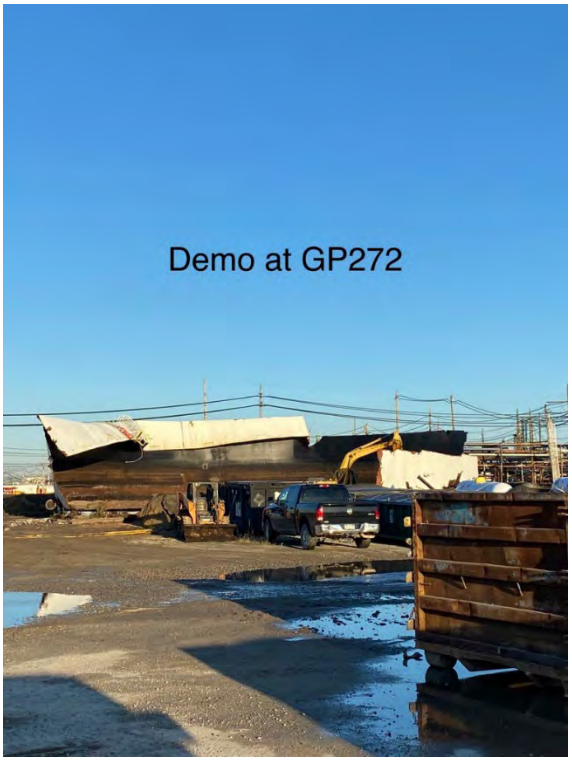
Facility Name and ID: -

County:

Township/Borough: At multiple AST locations, Site Assessment and Site Characterization sampling could not be completed because thick concrete tank foundations prevented access to the underlying soil and standing water which prevented soil sampling was present in some cases. Because of these physical obstructions, Site Characterization sampling results generated by Evergreen in AOI 7 were used to determine the sources of contamination and to determine the extent of migration of regulated substances in soil and groundwater. As such, figures and tables presenting soil data generated by PESRM for these ASTs (049A, 050A, 066A, 022A, and 003A) have not been attached as the soil has not yet been sampled by PESRM.

Photograph 1:

View of Tank 022A (GP R 272) during demolition.



Photograph 2:

View of Tank 022A (GP R 272) during demolition.

Photograph 3:

View of Tank 022A (GP R 272) during demolition.

Photograph 4:

View of Tank 022A (GP R 272) during demolition.

Photograph 5:

View of the tank material loadout from Tank 022A (GP R 272) after demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5120163

Load Ticket: 22975

Date: 09-09-22

Scrap

Sold to: Allegheny

Location: Tank 272

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 57950 lbs

Tare Weight: 42400 lbs

Net Weight: 15550 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20038482
Date: 09/09/2022 6:53 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 183357.876
Loads: 12053

DT327-1109 - ALLEGHENY TRUCK 327-1109
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	7.79 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	57980.00	42400.00	15580.00

22975

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 003A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See summary in figure section below							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

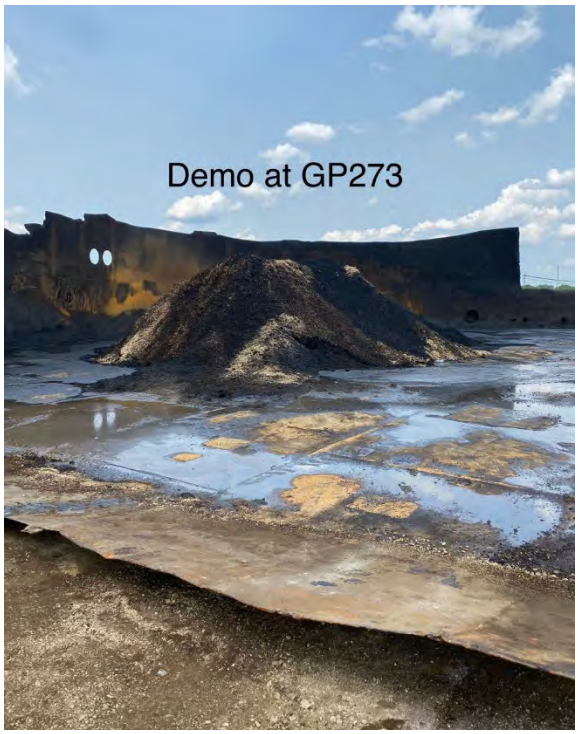
P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.
N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: At multiple AST locations, Site Assessment and Site Characterization sampling could not be completed because thick concrete tank foundations prevented access to the underlying soil and standing water which prevented soil sampling was present in some cases. Because of these physical obstructions, Site Characterization sampling results generated by Evergreen in AOI 7 were used to determine the sources of contamination and to determine the extent of migration of regulated substances in soil and groundwater. As such, figures and tables presenting soil data generated by PESRM for these ASTs (049A, 050A, 066A, 022A, and 003A) have not been attached as the soil has not yet been sampled by PESRM.

	**Photograph 1:** View of Tank 003A (GP R 273) during demolition.
	Photograph 2: View of Tank 003A (GP R 273) during demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5/2/0103

Load Ticket: 25504

Date: 05/24/23

Scrap

Sold to: Allegheny

Location: Tank 273

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 79880lbs

Tare Weight: 42400lbs

Net Weight: 37480lbs

NorthStar Rep. Signature:_____

Received By: Mike Fox

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20040246
Date: 05/24/2023 10:58 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 207990.216
Loads: 13803

DT327-1109 - ALLEGHENY TRUCK 327-1109
CARLAD - CARLA DAVILA

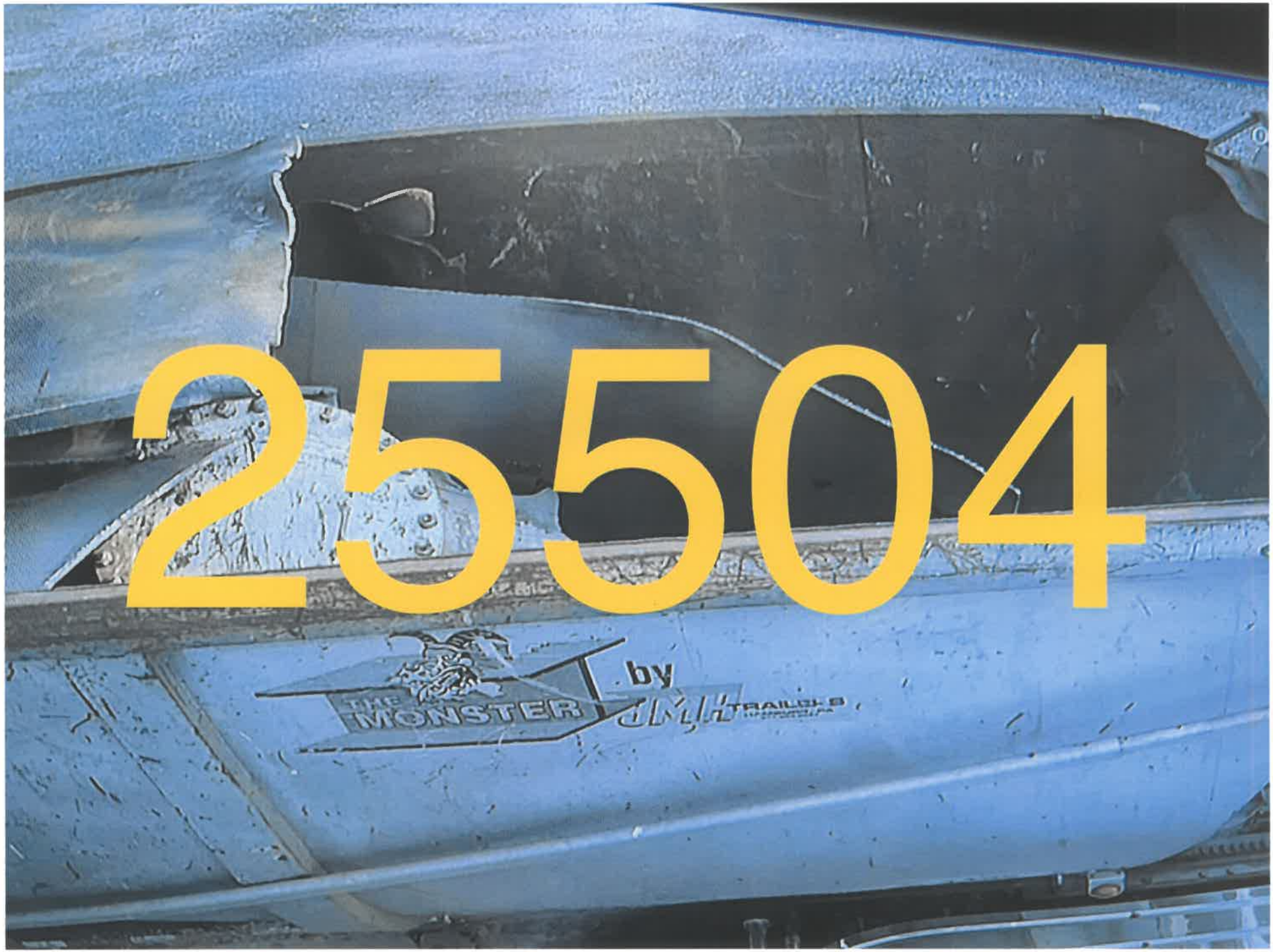
Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	18.74 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	79880.00	42400.00	37480.00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THE MONSTER
by
TRAILERS

Main & Yard
2200 E. Adams Ave
Philadelphia, PA 19124
(215) 743-7759

Affiliate Location
214 Conestoga St.
Lancaster, PA 17603
(717) 394-4424

ALLEGHENY IRON AND METAL CO., INC.

DEALERS IN

IRON & STEEL SCRAP

Date 5 24 23

Name Weinstein

Address PFS

Truck No. 327 TT Cust. No. 2504

Gross

Tare

Net

Weigh-In:
ID#: 327
07:26 am 05/24/23
80340 lb

Weigh-Out:
ID#: 327
07:41 am 05/24/23
80340 lb Gross
40600 lb Tare
39740 lb Net

VNP
Burial Tank
Plate

Haul - Fuel Charge: L 7

NOTICE: NO REFRIGERATORS, AIR CONDITIONERS, TOXIC CHEMICALS ASBESTOS, BATTERIES, TRANSFORMERS OR HAZARDOUS DRUMS ACCEPTED

Received by

K 53548

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5/20/23

Load Ticket: 25504

Date: 05-24-23

Scrap

Sold to: Allegheny

Location: Tank 273

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #: _____

Gross Weight: 79880 lbs

Tare Weight: 42400 lb

Net Weight: 37480 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location: _____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility: _____

Carrier: _____

Truck #: _____

Container #: _____

Manifest #: _____

Profile / Approval #: _____

Scale Info

Scale Ticket #: _____

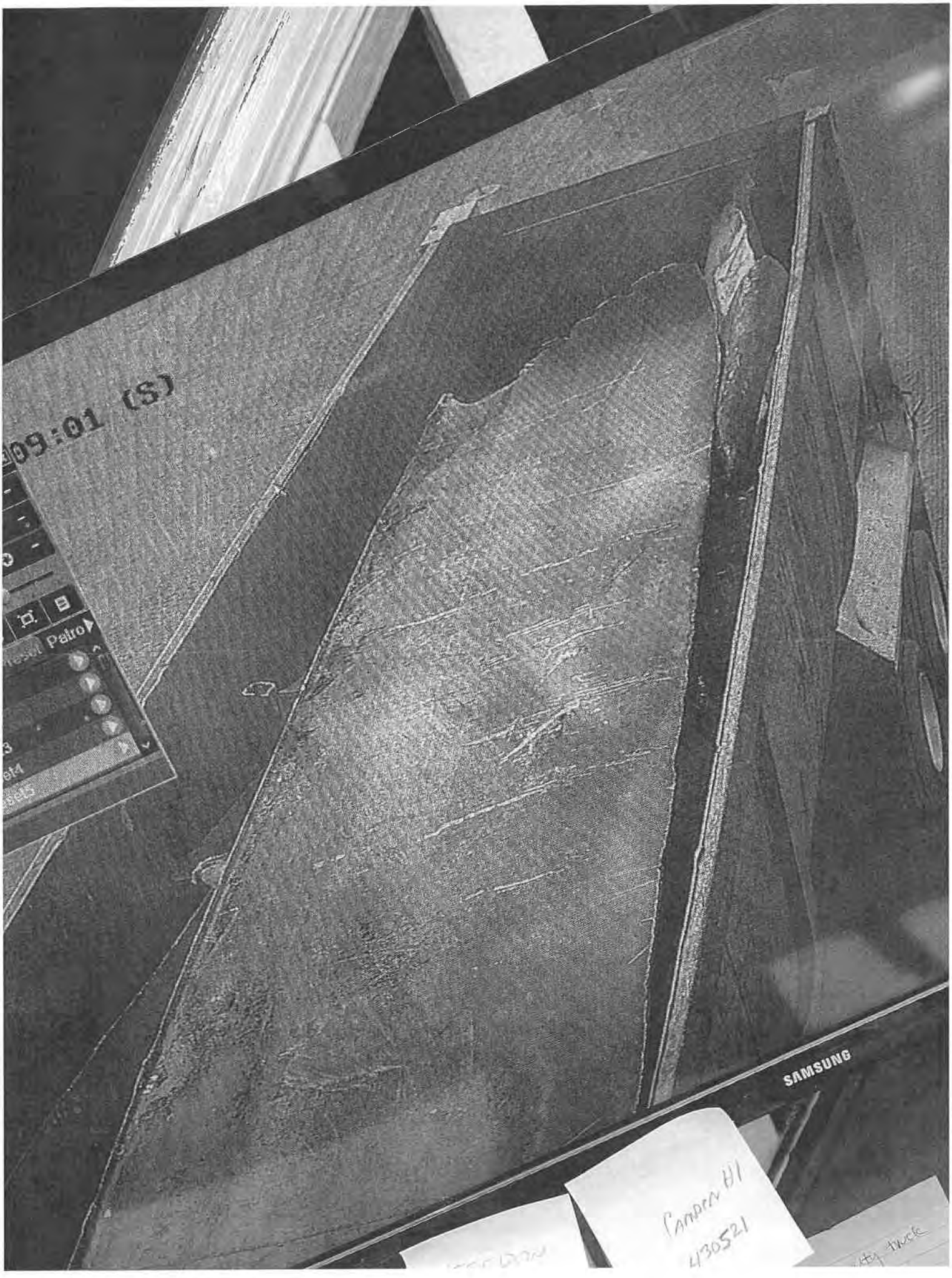
Gross Weight: _____

Tare weight: _____

Net weight: _____

Net Kilogram Conversion (PCB Only): _____

NorthStar Rep. Signature: _____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Camera #1
4/30/21

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 023A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 4 - 023A (GP R 276)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR276-01	GPR276-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.076	0.25	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.064	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.13	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.028	0.25	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Anthracene	SW8270E	Soil	2.8	0.16	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Benzene	SW8260D	Soil	0.04	0.064	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.3	0.16	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.6	0.22	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.7	0.82	12/7/2022	12/11/2022
GPR276-01	GPR276-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.3	0.22	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Chrysene	SW8270E	Soil	3.5	0.16	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Cumene	SW8260D	Soil	0.1	0.13	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.06	0.13	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Fluorene	SW8270E	Soil	3	0.28	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Lead	SW6010D	Soil	475	3.17	12/7/2022	12/9/2022
GPR276-01	GPR276-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.25	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	14	1.4	12/7/2022	12/11/2022
GPR276-01	GPR276-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	5.5	0.16	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Pyrene	SW8270E	Soil	7	0.16	12/7/2022	12/10/2022
GPR276-01	GPR276-01-SS01	4.5	5	Toluene	SW8260D	Soil	0.68	0.13	12/7/2022	12/12/2022
GPR276-01	GPR276-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.16	0.25	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.77	0.23	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.056	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.11	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.3	0.23	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Anthracene	SW8270E	Soil	0.28	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Benzene	SW8260D	Soil	0.96	0.056	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.68	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.88	0.18	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	1	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.68	0.18	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Chrysene	SW8270E	Soil	0.64	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Cumene	SW8260D	Soil	1.1	0.11	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.51	0.11	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Fluorene	SW8270E	Soil	0.2	0.23	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Lead	SW6010D	Soil	84.6	2.73	12/7/2022	12/9/2022
GPR276-03	GPR276-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.23	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Naphthalene	SW8270E	Soil	1.3	0.23	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.72	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Pyrene	SW8270E	Soil	1.1	0.14	12/7/2022	12/10/2022
GPR276-03	GPR276-03-SS01	4.5	5	Toluene	SW8260D	Soil	1.4	0.11	12/7/2022	12/12/2022
GPR276-03	GPR276-03-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	1.77	0.23	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0038	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00095	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0019	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0038	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Anthracene	SW8270E	Soil	1.1	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00095	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.5	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.7	0.2	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	1.8	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.99	0.2	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Chrysene	SW8270E	Soil	1.5	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0019	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0019	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Fluorene	SW8270E	Soil	0.93	0.24	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Lead	SW6010D	Soil	198	2.83	12/7/2022	12/9/2022
GPR276-05	GPR276-05-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0038	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Naphthalene	SW8270E	Soil	16	1.2	12/7/2022	12/11/2022
GPR276-05	GPR276-05-SS01	4.5	5	Phenanthrene	SW8270E	Soil	3.9	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Pyrene	SW8270E	Soil	2.5	0.15	12/7/2022	12/10/2022
GPR276-05	GPR276-05-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0019	12/7/2022	12/12/2022
GPR276-05	GPR276-05-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0038	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0033	0.0022	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00056	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0011	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.0067	0.0022	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Anthracene	SW8270E	Soil	0.27	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00056	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.49	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.51	0.15	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.57	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.28	0.15	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Chrysene	SW8270E	Soil	0.44	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Cumene	SW8260D	Soil	0.00047	0.0011	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00027	0.0011	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Fluorene	SW8270E	Soil	0.2	0.19	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Lead	SW6010D	Soil	82.9	2.26	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0022	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Naphthalene	SW8270E	Soil	2	0.19	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.96	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Pyrene	SW8270E	Soil	0.76	0.11	12/7/2022	12/10/2022
GPR276-06	GPR276-06-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0011	12/7/2022	12/12/2022
GPR276-06	GPR276-06-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.0052	0.0022	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00046	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00092	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Anthracene	SW8270E	Soil	1.4	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00046	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.2	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.9	0.14	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.2	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.86	0.14	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Chrysene	SW8270E	Soil	1.9	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.00092	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.00092	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Fluorene	SW8270E	Soil	0.71	0.18	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Lead	SW6010D	Soil	896	2.17	12/7/2022	12/10/2022

Table 4 - 023A (GP R 276)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR276-07	GPR276-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.38	0.18	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4.6	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Pyrene	SW8270E	Soil	3.6	0.11	12/7/2022	12/10/2022
GPR276-07	GPR276-07-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.00092	12/7/2022	12/12/2022
GPR276-07	GPR276-07-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0022	0.0033	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00083	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00063	0.0033	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Anthracene	SW8270E	Soil	0.85	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00083	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.8	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.2	0.2	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.4	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.5	0.2	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Chrysene	SW8270E	Soil	1.7	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Cumene	SW8260D	Soil	0.00046	0.0016	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Fluorene	SW8270E	Soil	0.49	0.26	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Lead	SW6010D	Soil	397	3.03	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0033	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Naphthalene	SW8270E	Soil	7.9	0.26	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.7	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Pyrene	SW8270E	Soil	2.6	0.15	12/7/2022	12/10/2022
GPR276-11	GPR276-11-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-11	GPR276-11-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00227	0.0033	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	2.8	0.28	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.07	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.14	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.9	0.28	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Anthracene	SW8270E	Soil	1.4	0.13	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Benzene	SW8260D	Soil	7.9	0.07	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	8.5	0.64	12/7/2022	12/11/2022
GPR276-12	GPR276-12-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	9.2	0.86	12/7/2022	12/11/2022
GPR276-12	GPR276-12-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	10	0.64	12/7/2022	12/11/2022
GPR276-12	GPR276-12-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	5.4	0.17	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Chrysene	SW8270E	Soil	7.2	0.13	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Cumene	SW8260D	Soil	1.4	0.14	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	4.2	0.14	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Fluorene	SW8270E	Soil	0.4	0.21	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Lead	SW6010D	Soil	131	2.58	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.28	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Naphthalene	SW8270E	Soil	4.2	0.21	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Phenanthrene	SW8270E	Soil	3	0.13	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Pyrene	SW8270E	Soil	8	0.13	12/7/2022	12/10/2022
GPR276-12	GPR276-12-SS01	4.5	5	Toluene	SW8260D	Soil	4.8	0.14	12/7/2022	12/12/2022
GPR276-12	GPR276-12-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	11.72	0.28	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00081	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Anthracene	SW8270E	Soil	1.4	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00081	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.9	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	4	0.2	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	4.4	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	2.6	0.2	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Chrysene	SW8270E	Soil	3	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Fluorene	SW8270E	Soil	0.79	0.25	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Lead	SW6010D	Soil	167	2.84	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Naphthalene	SW8270E	Soil	14	1.2	12/7/2022	12/11/2022
GPR276-13	GPR276-13-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Pyrene	SW8270E	Soil	3.9	0.15	12/7/2022	12/10/2022
GPR276-13	GPR276-13-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR276-13	GPR276-13-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.066	0.11	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.028	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	0.037	0.056	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.051	0.11	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Anthracene	SW8270E	Soil	0.17	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Benzene	SW8260D	Soil	0.083	0.028	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.35	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.38	0.15	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.47	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.22	0.15	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Chrysene	SW8270E	Soil	0.37	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Cumene	SW8260D	Soil	0.26	0.056	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.087	0.056	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Fluorene	SW8270E	Soil	0.13	0.18	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Lead	SW6010D	Soil	7.08	2.13	12/7/2022	12/10/2022
GPR276-15	GPR276-15-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.11	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Naphthalene	SW8270E	Soil	5.8	0.18	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.73	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Pyrene	SW8270E	Soil	0.64	0.11	12/7/2022	12/9/2022
GPR276-15	GPR276-15-SS01	4.5	5	Toluene	SW8260D	Soil	0.27	0.056	12/7/2022	12/12/2022
GPR276-15	GPR276-15-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.401	0.11	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.024	0.0036	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0009	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.013	0.0036	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Anthracene	SW8270E	Soil	16	0.29	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Benzene	SW8260D	Soil	0.014	0.0009	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	55	2.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	59	3.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	56	2.9	12/7/2022	12/11/2022

Table 4 - 023A (GP R 276)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR276-16	GPR276-16-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	45	3.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Chrysene	SW8270E	Soil	60	2.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Cumene	SW8260D	Soil	0.26	0.0018	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0018	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Fluorene	SW8270E	Soil	18	0.48	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Lead	SW6010D	Soil	284	2.91	12/7/2022	12/10/2022
GPR276-16	GPR276-16-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0036	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Naphthalene	SW8270E	Soil	6.4	0.48	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Phenanthrene	SW8270E	Soil	150	2.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Pyrene	SW8270E	Soil	160	2.9	12/7/2022	12/11/2022
GPR276-16	GPR276-16-SS01	4.5	5	Toluene	SW8260D	Soil	0.013	0.0018	12/7/2022	12/12/2022
GPR276-16	GPR276-16-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.044	0.0036	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.99	0.24	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.059	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.12	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.31	0.24	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Anthracene	SW8270E	Soil	0.96	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Benzene	SW8260D	Soil	0.17	0.059	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.1	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.8	0.21	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	1.9	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.4	0.21	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Chrysene	SW8270E	Soil	1.2	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Cumene	SW8260D	Soil	1.4	0.12	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.32	0.12	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Fluorene	SW8270E	Soil	0.68	0.26	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Lead	SW6010D	Soil	383	2.95	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.24	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Naphthalene	SW8270E	Soil	8	0.26	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.6	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Pyrene	SW8270E	Soil	1.7	0.16	12/7/2022	12/10/2022
GPR276-17	GPR276-17-SS01	4.5	5	Toluene	SW8260D	Soil	1	0.12	12/7/2022	12/12/2022
GPR276-17	GPR276-17-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	1.57	0.24	12/7/2022	12/12/2022

Notes:
ND -- Not Detected
SS -- Soil Sample

GP 277

GP R 286

GP R 273

GPR276-01

GPR276-03

GPR276-06

GPR276-05

GP R 276

GPR276-07

GPR276-11

GPR276-15

GP R 285

GPR276-13

GPR276-16

GPR276-12

GPR276-17

Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- Associated Piping
- PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 023A (GP R 276)

Figure 4

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 4 - 023A (GP R 276).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 023A (GP R 276) during demolition.

Photograph 2:

View of Tank 023A (GP R 276) during demolition.

	Photograph 3: View of Tank 023A (GP R 276) during demolition.
	Photograph 4: View of the tank material loadout from Tank 023A (GP R 276) after demolition.

Photograph 5:

View of the tank material loadout from Tank 023A (GP R 276) after demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5120103

Load Ticket: 25463

Date: 05-11-23

Scrap

Sold to: Allegheny

Location: Tank 270

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☑ Light Iron
- ☐ Re-Bar
- ☐ Other _____

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 57300165

Tare Weight: 38800165

Net Weight: 18500125

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20040216
Date: 05/11/2023 2:18 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 207454.486
Loads: 13774

RO-16 - ALLEGHANY ROLL OFF 16
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	9.25 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	57360.00	38860.00	18500.00

25463

Main & Yard
2200 E. Adams Ave
Philadelphia, PA 19124
(215) 743-7759

Affiliate Location
214 Conestoga St.
Lancaster, PA 17603
(717) 394-4424

ALLEGHENY IRON AND METAL CO., INC.

DEALERS IN

IRON & STEEL SCRAP

Date 5-11-23

Name Northern

Address PES

Truck No. R016 Cust. No. 25463

Gross

Weigh-In:
ID#: 16
10:41 am 05/11/23
57340 lb

Tare

Net

Weigh-Out:
ID#: 16
10:49 am 05/11/23
57340 lb Gross
38960 lb Tare
18380 lb Net

LT Iron

Haul - Fuel Charge:

NOTICE: NO REFRIGERATORS, AIR CONDITIONERS, TOXIC CHEMICALS ASBESTOS, BATTERIES, TRANSFORMERS OR HAZARDOUS DRUMS ACCEPTED

Received by

K 53064

NorthStar Contracting Group, Inc.

PES Project Load Ticket

5120103

Load Ticket: 25463

Date: 05-11-23

Scrap

Sold to: Allegheny

Location: Tank 270

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☒ Light Iron
- ☐ Re-Bar
- ☐ Other _____

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade _____
- ☐ Other Alloy, Grade _____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other: _____

Scale Ticket #: _____

Gross Weight: 57300 lbs

Tare Weight: 38800 lbs

Net Weight: 18500 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location: _____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☒ PCB (TSCA)

Disposal Facility: _____

Carrier: _____

Truck #: _____

Container #: _____

Manifest #: _____

Profile / Approval #: _____

Scale Info

Scale Ticket #: _____

Gross Weight: _____

Tare weight: _____

Net weight: _____

Net Kilogram Conversion (PCB Only): _____

NorthStar Rep. Signature: _____

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 047A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

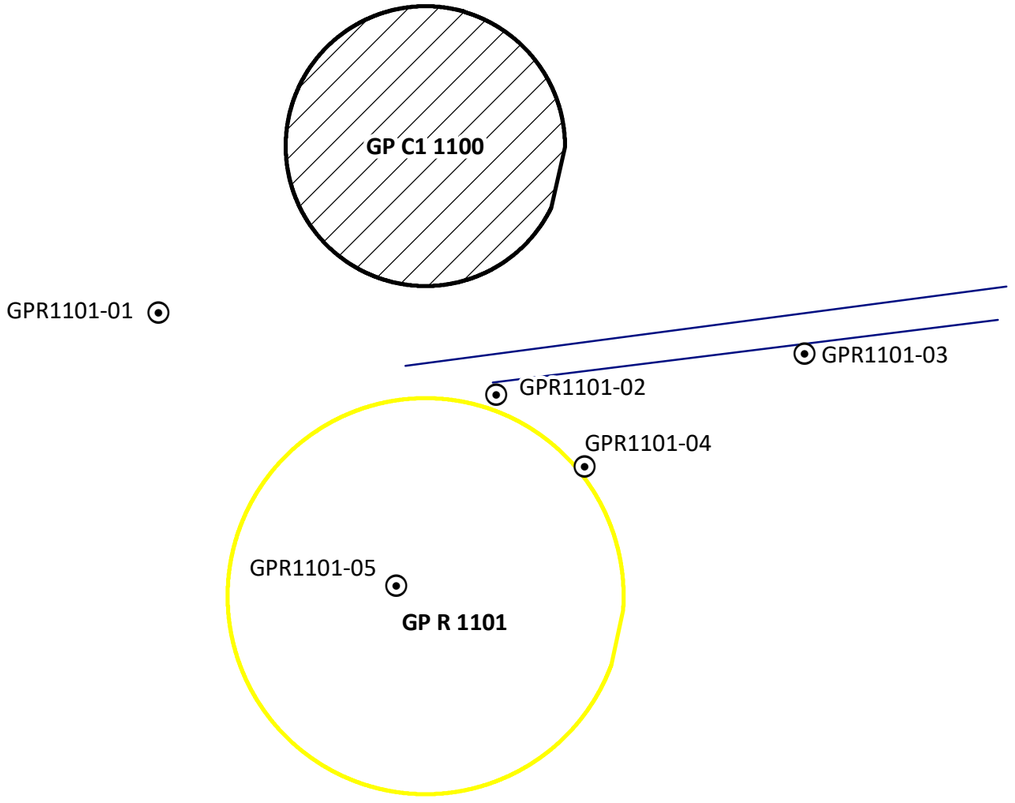
Table 1 - 047A (GP R 1101)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1101-01	GPR1101-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.4	0.19	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.047	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.093	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.028	0.19	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Anthracene	SW8270E	Soil	1.4	0.14	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Benzene	SW8260D	Soil	0.1	0.047	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.5	0.14	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.3	0.19	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.38	0.14	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.25	0.19	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Chrysene	SW8270E	Soil	0.57	0.14	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Cumene	SW8260D	Soil	3.9	0.093	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.055	0.093	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Fluorene	SW8270E	Soil	3.2	0.24	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Indeno(1,2,3-cd)pyrene	SW8270E	Soil	0.23	0.19	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Lead	SW6010D	Soil	379	2.77	12/9/2022	12/13/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.19	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	2.5	0.24	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	12	0.28	12/9/2022	12/16/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Pyrene	SW8270E	Soil	1.4	0.14	12/9/2022	12/11/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Toluene	SW8260D	Soil	0.27	0.093	12/9/2022	12/14/2022
GPR1101-01	GPR1101-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.443	0.19	12/9/2022	12/14/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.3	0.15	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.037	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.074	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.064	0.15	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Anthracene	SW8270E	Soil	0.21	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Benzene	SW8260D	Soil	0.08	0.037	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Benzo(a)anthracene	SW8270E	Soil	0.066	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Benzo(a)pyrene	SW8270E	Soil	0.11	0.16	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Benzo(b)fluoranthene	SW8270E	Soil	0.11	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.18	0.16	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Chrysene	SW8270E	Soil	0.2	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Cumene	SW8260D	Soil	0.39	0.074	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Ethyl Benzene	SW8260D	Soil	0.16	0.074	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Fluorene	SW8270E	Soil	0.12	0.2	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Indeno(1,2,3-cd)pyrene	SW8270E	Soil	0.086	0.16	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Lead	SW6010D	Soil	380	2.44	12/9/2022	12/13/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.15	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Naphthalene	SW8270E	Soil	0.22	0.2	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Phenanthrene	SW8270E	Soil	0.33	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Pyrene	SW8270E	Soil	0.48	0.12	12/9/2022	12/11/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Toluene	SW8260D	Soil	0.2	0.074	12/9/2022	12/12/2022
GPR1101-02	GPR1101-02-SS01	3	3.5	Xylenes (total)	SW8260D	Soil	0.76	0.15	12/9/2022	12/12/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.7	0.2	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.05	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.1	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.13	0.2	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Anthracene	SW8270E	Soil	0.22	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Benzene	SW8260D	Soil	0.022	0.05	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.16	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	0.14	0.18	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	0.17	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.13	0.18	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Chrysene	SW8270E	Soil	0.18	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Cumene	SW8260D	Soil	1.1	0.1	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	0.047	0.1	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Fluorene	SW8270E	Soil	0.53	0.22	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Indeno(1,2,3-cd)pyrene	SW8270E	Soil	0.12	0.18	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Lead	SW6010D	Soil	396	2.56	12/9/2022	12/13/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.2	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Naphthalene	SW8270E	Soil	0.37	0.22	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Phenanthrene	SW8270E	Soil	1.2	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Pyrene	SW8270E	Soil	0.32	0.13	12/9/2022	12/11/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Toluene	SW8260D	Soil	0.3	0.1	12/9/2022	12/14/2022
GPR1101-03	GPR1101-03-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	0.141	0.2	12/9/2022	12/14/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	51	1.6	12/9/2022	12/14/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.078	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.16	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	21	0.31	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Anthracene	SW8270E	Soil	6.9	0.61	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Benzene	SW8260D	Soil	0.23	0.078	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.3	0.61	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.6	0.81	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.67	0.61	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.5	0.81	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Chrysene	SW8270E	Soil	2.7	0.61	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Cumene	SW8260D	Soil	1.9	0.16	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.3	0.16	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Fluorene	SW8270E	Soil	17	1	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Indeno(1,2,3-cd)pyrene	SW8270E	Soil	0.26	0.81	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Lead	SW6010D	Soil	99.4	2.42	12/9/2022	12/13/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.31	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Naphthalene	SW8270E	Soil	ND	1	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Phenanthrene	SW8270E	Soil	40	3	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Pyrene	SW8270E	Soil	8.3	0.61	12/9/2022	12/16/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Toluene	SW8260D	Soil	0.29	0.16	12/9/2022	12/12/2022
GPR1101-04	GPR1101-04-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	2.7	0.31	12/9/2022	12/12/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.002	0.0024	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0006	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0012	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0024	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Anthracene	SW8270E	Soil	0.24	0.12	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.0006	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.15	0.12	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	0.2	0.16	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	0.18	0.12	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.32	0.16	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Chrysene	SW8270E	Soil	0.34	0.12	12/9/2022	12/11/2022

Table 1 - 047A (GP R 1101)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1101-05	GPR1101-05-SS01	4	4.5	Cumene	SW8260D	Soil	0.0065	0.0012	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0012	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Fluorene	SW8270E	Soil	0.081	0.2	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Indeno(1,2,3-cd)pyrene	SW8270E	Soil	0.13	0.16	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Lead	SW6010D	Soil	169	2.32	12/9/2022	12/13/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0024	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Naphthalene	SW8270E	Soil	0.098	0.2	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Phenanthrene	SW8270E	Soil	0.3	0.12	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Pyrene	SW8270E	Soil	0.8	0.12	12/9/2022	12/11/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0012	12/9/2022	12/14/2022
GPR1101-05	GPR1101-05-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	0.00217	0.0024	12/9/2022	12/14/2022

Notes:
ND -- Not Detected
SS -- Soil Sample



Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- Associated Piping
- PESRM Soil Sample Location

0 10 20 30 Feet

1 inch = 10 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 047A (GP R 1101)

Figure 1

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 1 - 047A (GP R 1101).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 025A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☐ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☒ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills): During removal of the tank foundation, non-aqueous phase liquid (NAPL) and ponded water were encountered beneath the concrete pad. The observed NAPLwas observed to be confied to the ring wall of the tank foundation. The source and volume of the release has not yet been determined.

- - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☒ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 5 - 025A (GP R 281)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR281	TANK-281-LNAPL-20230118	--	--	1,1-Biphenyl	SW8270ESIM(M)	LNAPL	ND	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	13A,17B-20S-Ethyldiacholestane (S19)	SW8270ESIM(M)	LNAPL	5.31	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	13B(H),17A(H)-20R-Diacholestane (S5)	SW8270ESIM(M)	LNAPL	38.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	13B(H),17A(H)-20S-Diacholestane (S4)	SW8270ESIM(M)	LNAPL	69.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	13B,17A-20S-Methyldiacholestane (S8)	SW8270ESIM(M)	LNAPL	36.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A(H),17A(H)-20R-Cholestane/13B(H),17A(H)-20R-E	SW8270ESIM(M)	LNAPL	99.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A(H),17A(H)-20R-Ethylcholestane (S28)	SW8270ESIM(M)	LNAPL	61.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A(H),17A(H)-20S-Cholestane/13B(H),17A(H)-20S-Et	SW8270ESIM(M)	LNAPL	87.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A(H),17A(H)-20S-Ethylcholestane (S25)	SW8270ESIM(M)	LNAPL	50.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A,17A-20R-Methylcholestane (S24)	SW8270ESIM(M)	LNAPL	49.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14A,17A-20S-Methylcholestane (S20)	SW8270ESIM(M)	LNAPL	43.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B(H),17B(H)-20R-Cholestane (S14)	SW8270ESIM(M)	LNAPL	49.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B(H),17B(H)-20R-Ethylcholestane (S26)	SW8270ESIM(M)	LNAPL	67.6	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B(H),17B(H)-20S-Cholestane (S15)	SW8270ESIM(M)	LNAPL	50.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B(H),17B(H)-20S-Ethylcholestane (S27)	SW8270ESIM(M)	LNAPL	38.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B,17B-20R-Methylcholestane (S22)	SW8270ESIM(M)	LNAPL	46.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	14B,17B-20S-Methylcholestane (S23)	SW8270ESIM(M)	LNAPL	60.6	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	17A(H),21B(H)-25-Norhopane (T14B)	SW8270ESIM(M)	LNAPL	6.77	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	17A(H)-22,29,30-Trisnorhopane-TM (T12)	SW8270ESIM(M)	LNAPL	71.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	17A(H)-Diahopane (X)	SW8270ESIM(M)	LNAPL	21.6	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	17A/B,21B/A 28,30-Bisnorhopane (T14A)	SW8270ESIM(M)	LNAPL	25.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	18A(H)&18B(H)-Oleananes (T18)	SW8270ESIM(M)	LNAPL	219	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	18A(H)-30-Norneohopane-C29TS (T16)	SW8270ESIM(M)	LNAPL	71.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	18A-22,29,30-Trisnorneohopane-TS (T11)	SW8270ESIM(M)	LNAPL	66.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	1-Methyldibenzothiophene	SW8270ESIM(M)	LNAPL	14.2	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	1-Methylnaphthalene	SW8270ESIM(M)	LNAPL	13.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	1-Methylphenanthrene	SW8270ESIM(M)	LNAPL	50	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	1-Methylpyrene	SW8270ESIM(M)	LNAPL	18.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2,3,5-Trimethylnaphthalene	SW8270ESIM(M)	LNAPL	55.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2,3-Benzothiophene	SW8270ESIM(M)	LNAPL	ND	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2,6-Dimethylnaphthalene	SW8270ESIM(M)	LNAPL	49	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2/3-Methyldibenzothiophene	SW8270ESIM(M)	LNAPL	28.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2-Methylanthracene	SW8270ESIM(M)	LNAPL	9.36	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2-Methylnaphthalene	SW8270ESIM(M)	LNAPL	9.36	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2-Methylphenanthrene	SW8270ESIM(M)	LNAPL	14.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	2-Methylpyrene	SW8270ESIM(M)	LNAPL	21.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30,31-Bishomohopane-22R (T27)	SW8270ESIM(M)	LNAPL	55.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30,31-Bishomohopane-22S (T26)	SW8270ESIM(M)	LNAPL	67.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30,31-Trishomohopane-22R (T31)	SW8270ESIM(M)	LNAPL	25.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30,31-Trishomohopane-22S (T30)	SW8270ESIM(M)	LNAPL	44.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30-Homohopane-22R (T22)	SW8270ESIM(M)	LNAPL	83.6	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30-Homohopane-22S (T21)	SW8270ESIM(M)	LNAPL	101	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30-Norhopane (T15)	SW8270ESIM(M)	LNAPL	239	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	30-Normoretane (T17)	SW8270ESIM(M)	LNAPL	51.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	3-Methylphenanthrene	SW8270ESIM(M)	LNAPL	21.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	4-Methyldibenzothiophene	SW8270ESIM(M)	LNAPL	30.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	4-Methylpyrene	SW8270ESIM(M)	LNAPL	26.2	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	7H-Benzo(c)fluorene	SW8270ESIM(M)	LNAPL	6.42	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	9/4-Methylphenanthrene	SW8270ESIM(M)	LNAPL	36.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Acenaphthene	SW8270ESIM(M)	LNAPL	7.33	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Acenaphthylene	SW8270ESIM(M)	LNAPL	1.24	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Anthracene	SW8270ESIM(M)	LNAPL	10.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(a)anthracene	SW8270ESIM(M)	LNAPL	13.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(a)fluoranthene	SW8270ESIM(M)	LNAPL	ND	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(a)pyrene	SW8270ESIM(M)	LNAPL	10.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(b)fluoranthene	SW8270ESIM(M)	LNAPL	9.25	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(b)fluorene	SW8270ESIM(M)	LNAPL	10.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(e)pyrene	SW8270ESIM(M)	LNAPL	15.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(g,h,i)perylene	SW8270ESIM(M)	LNAPL	5.04	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Benzo(j+k)fluoranthene	SW8270ESIM(M)	LNAPL	3.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Anthracenes/Phenanthrenes	SW8270ESIM(M)	LNAPL	142	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Benzo(b)thiophenes	SW8270ESIM(M)	LNAPL	4.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Chrysenes	SW8270ESIM(M)	LNAPL	125	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Decalins	SW8270ESIM(M)	LNAPL	21.4	1.18	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Dibenzothiophenes	SW8270ESIM(M)	LNAPL	75	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Fluoranthenes/Pyrenes	SW8270ESIM(M)	LNAPL	125	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Fluorenes	SW8270ESIM(M)	LNAPL	89.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Naphthalenes	SW8270ESIM(M)	LNAPL	13.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C1-Naphthobenzothiophenes	SW8270ESIM(M)	LNAPL	97.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C23 Tricyclic Terpane (T4)	SW8270ESIM(M)	LNAPL	36.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C24 Tetracyclic Terpane (T6A)	SW8270ESIM(M)	LNAPL	17.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C24 Tricyclic Terpane (T5)	SW8270ESIM(M)	LNAPL	28.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C25 Tricyclic Terpane (T6)	SW8270ESIM(M)	LNAPL	25.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C26 Tricyclic Terpane-22R (T6C)	SW8270ESIM(M)	LNAPL	12.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C26 Tricyclic Terpane-22S (T6B)	SW8270ESIM(M)	LNAPL	14.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C26,20R+C27,20S-triaromatic steroid (TAS1)	SW8270ESIM(M)	LNAPL	255	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C27,20R-triaromatic steroid (TAS3)	SW8270ESIM(M)	LNAPL	158	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C28 Tricyclic Terpane-22R (T8)	SW8270ESIM(M)	LNAPL	14.7	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C28 Tricyclic Terpane-22S (T7)	SW8270ESIM(M)	LNAPL	15.2	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C28,20R-triaromatic steroid (TAS4)	SW8270ESIM(M)	LNAPL	167	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C28,20S-triaromatic steroid (TAS2)	SW8270ESIM(M)	LNAPL	197	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C29 Tricyclic Terpane-22R (T10)	SW8270ESIM(M)	LNAPL	13.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C29 Tricyclic Terpane-22S (T9)	SW8270ESIM(M)	LNAPL	14.2	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Anthracenes/Phenanthrenes	SW8270ESIM(M)	LNAPL	436	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Benzo(b)thiophenes	SW8270ESIM(M)	LNAPL	8.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Chrysenes	SW8270ESIM(M)	LNAPL	177	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Decalins	SW8270ESIM(M)	LNAPL	32	1.18	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Dibenzothiophenes	SW8270ESIM(M)	LNAPL	186	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Fluoranthenes/Pyrenes	SW8270ESIM(M)	LNAPL	176	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Fluorenes	SW8270ESIM(M)	LNAPL	264	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Naphthalenes	SW8270ESIM(M)	LNAPL	110	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C2-Naphthobenzothiophenes	SW8270ESIM(M)	LNAPL	137	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C30 Tricyclic Terpane-22R	SW8270ESIM(M)	LNAPL	11.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C30 Tricyclic Terpane-22S (T11a)	SW8270ESIM(M)	LNAPL	17.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Anthracenes/Phenanthrenes	SW8270ESIM(M)	LNAPL	410	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Benzo(b)thiophenes	SW8270ESIM(M)	LNAPL	21.2	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Chrysenes	SW8270ESIM(M)	LNAPL	176	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Decalins	SW8270ESIM(M)	LNAPL	31.5	1.18	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Dibenzothiophenes	SW8270ESIM(M)	LNAPL	245	2.37	1/18/2023	2/4/2023

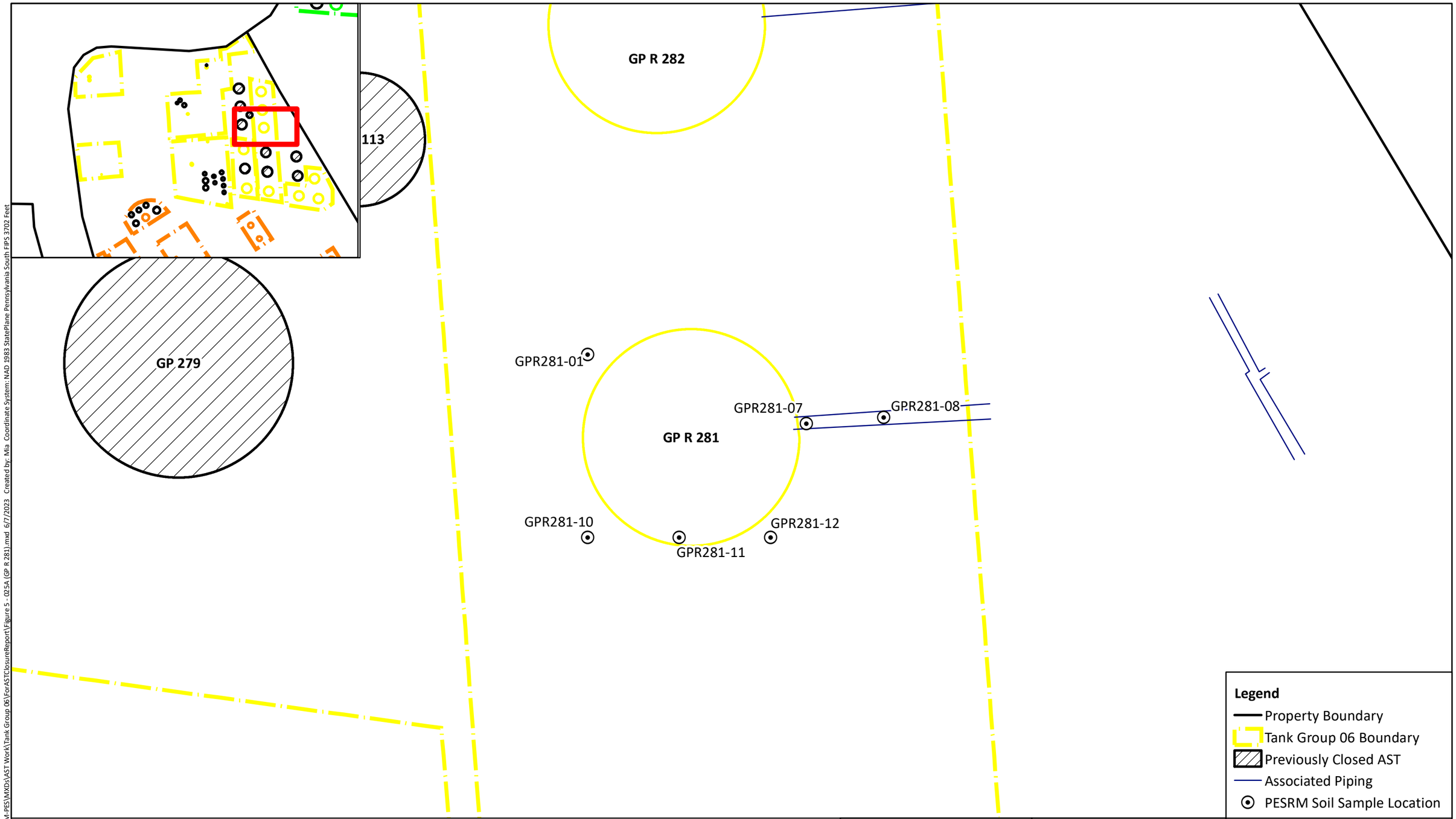
Table 5 - 025A (GP R 281)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Fluoranthenes/Pyrenes	SW8270ESIM(M)	LNAPL	201	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Fluorenes	SW8270ESIM(M)	LNAPL	305	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Naphthalenes	SW8270ESIM(M)	LNAPL	268	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C3-Naphthobenzothiophenes	SW8270ESIM(M)	LNAPL	112	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Anthracenes/Phenanthrenes	SW8270ESIM(M)	LNAPL	207	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Benzo(b)thiophenes	SW8270ESIM(M)	LNAPL	24.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Chrysenes	SW8270ESIM(M)	LNAPL	113	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Decalins	SW8270ESIM(M)	LNAPL	79.2	1.18	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Dibenzothiophenes	SW8270ESIM(M)	LNAPL	129	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Fluoranthenes/Pyrenes	SW8270ESIM(M)	LNAPL	168	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Naphthalenes	SW8270ESIM(M)	LNAPL	272	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	C4-Naphthobenzothiophenes	SW8270ESIM(M)	LNAPL	81.8	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Carbazole	SW8270ESIM(M)	LNAPL	ND	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Chrysene/Triphenylene	SW8270ESIM(M)	LNAPL	43.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	cis/trans-Decalin	SW8270ESIM(M)	LNAPL	9.92	1.18	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Dibenz(a,h+a,c)anthracene	SW8270ESIM(M)	LNAPL	2.59	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Dibenzofuran	SW8270ESIM(M)	LNAPL	2.88	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Dibenzothiophene	SW8270ESIM(M)	LNAPL	4.59	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Fluoranthene	SW8270ESIM(M)	LNAPL	9.11	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Fluorene	SW8270ESIM(M)	LNAPL	25.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Hopane (T19)	SW8270ESIM(M)	LNAPL	365	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Indeno(1,2,3-cd)pyrene	SW8270ESIM(M)	LNAPL	2.71	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Moretane (T20)	SW8270ESIM(M)	LNAPL	61.4	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Naphthalene	SW8270ESIM(M)	LNAPL	4.65	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Naphthobenzothiophenes	SW8270ESIM(M)	LNAPL	27.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Pentakishomohopane-22R (T35)	SW8270ESIM(M)	LNAPL	17.9	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Pentakishomohopane-22S (T34)	SW8270ESIM(M)	LNAPL	17	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Perylene	SW8270ESIM(M)	LNAPL	32.3	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Phenanthrene	SW8270ESIM(M)	LNAPL	9.22	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Pyrene	SW8270ESIM(M)	LNAPL	48.5	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Retene	SW8270ESIM(M)	LNAPL	ND	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Tetrakishomohopane-22R (T33)	SW8270ESIM(M)	LNAPL	22.1	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Tetrakishomohopane-22S (T32)	SW8270ESIM(M)	LNAPL	28.6	2.37	1/18/2023	2/4/2023
GPR281	TANK-281-LNAPL-20230118	--	--	Unknown Sterane (S18)	SW8270ESIM(M)	LNAPL	18.6	2.37	1/18/2023	2/4/2023
GPR281-01	GPR281-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0014	0.0032	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0008	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00052	0.0032	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Anthracene	SW8270E	Soil	0.23	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.0008	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.24	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.3	0.19	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.34	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.19	0.19	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Chrysene	SW8270E	Soil	0.26	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0016	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Fluorene	SW8270E	Soil	0.2	0.24	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Lead	SW6010D	Soil	284	2.8	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0032	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	4.5	0.24	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.71	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Pyrene	SW8270E	Soil	0.32	0.14	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/6/2022	12/8/2022
GPR281-01	GPR281-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0032	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0024	0.0016	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0004	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.00081	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Anthracene	SW8270E	Soil	0.061	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.0004	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.19	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.061	0.15	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.12	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.044	0.15	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Chrysene	SW8270E	Soil	0.55	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Cumene	SW8260D	Soil	0.00015	0.00081	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.00081	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Fluorene	SW8270E	Soil	0.14	0.19	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Lead	SW6010D	Soil	33.7	2.22	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.032	0.19	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.33	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Pyrene	SW8270E	Soil	0.38	0.11	12/6/2022	12/8/2022
GPR281-07	GPR281-07-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.00081	12/6/2022	12/9/2022
GPR281-07	GPR281-07-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00164	0.0016	12/6/2022	12/9/2022
GPR281-08	GPR281-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00067	0.003	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00075	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0015	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.003	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Anthracene	SW8270E	Soil	0.24	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00075	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.42	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.51	0.19	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.58	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.32	0.19	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Chrysene	SW8270E	Soil	0.47	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0015	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0015	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Fluorene	SW8270E	Soil	0.21	0.24	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Lead	SW6010D	Soil	206	2.79	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.003	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	4.4	0.24	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.7	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Pyrene	SW8270E	Soil	0.55	0.14	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0015	12/6/2022	12/8/2022
GPR281-08	GPR281-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.003	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00085	0.0044	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	1,2-Dibromoethane	SW8260D	Soil	ND	0.0011	12/6/2022	12/8/2022

Table 5 - 025A (GP R 281)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR281-10	GPR281-10-SS01	3.5	4	1,2-Dichloroethane	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0044	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Anthracene	SW8270E	Soil	0.79	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Benzene	SW8260D	Soil	ND	0.0011	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Benzo(a)anthracene	SW8270E	Soil	1.9	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Benzo(a)pyrene	SW8270E	Soil	1.9	0.2	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Benzo(b)fluoranthene	SW8270E	Soil	2	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Benzo(g,h,i)perylene	SW8270E	Soil	1	0.2	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Chrysene	SW8270E	Soil	1.9	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Cumene	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Ethyl Benzene	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Fluorene	SW8270E	Soil	0.52	0.25	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Lead	SW6010D	Soil	363	2.98	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0044	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Naphthalene	SW8270E	Soil	4.9	0.25	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Phenanthrene	SW8270E	Soil	2.4	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Pyrene	SW8270E	Soil	2.8	0.15	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Toluene	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-10	GPR281-10-SS01	3.5	4	Xylenes (total)	SW8260D	Soil	ND	0.0044	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0012	0.0026	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00064	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00045	0.0026	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Anthracene	SW8270E	Soil	0.042	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Benzene	SW8260D	Soil	0.00037	0.00064	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.11	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.1	0.15	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.17	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.086	0.15	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Chrysene	SW8270E	Soil	0.36	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00021	0.0013	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Fluorene	SW8270E	Soil	0.051	0.18	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Lead	SW6010D	Soil	24.4	2.24	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0026	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.068	0.18	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.16	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Pyrene	SW8270E	Soil	0.32	0.11	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR281-11	GPR281-11-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00184	0.0026	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00038	0.0022	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00054	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0011	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Anthracene	SW8270E	Soil	ND	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Benzene	SW8260D	Soil	0.00036	0.00054	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.26	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	ND	0.74	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.19	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.11	0.74	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Chrysene	SW8270E	Soil	0.64	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0011	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00016	0.0011	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Fluorene	SW8270E	Soil	0.092	0.93	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Lead	SW6010D	Soil	162	11.2	12/6/2022	12/12/2022
GPR281-12	GPR281-12-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Naphthalene	SW8270E	Soil	ND	0.93	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.3	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Pyrene	SW8270E	Soil	0.54	0.56	12/6/2022	12/10/2022
GPR281-12	GPR281-12-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0011	12/6/2022	12/8/2022
GPR281-12	GPR281-12-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0022	12/6/2022	12/8/2022

Notes:
ND -- Not Detected
SS -- Soil Sample
LNAPL -- Light Nonaqueous Phase Liquids



Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- Associated Piping
- PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 025A (GP R 281)

Figure 5

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 5 - 025A (GP R 281).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 025A (GP R 281) during demolition.

Photograph 2:

View of test pits advanced in Tank 025A (GP R 281) foundation slab following demolition.

Photograph 3:

View of NAPL beneath the tank foundation at Tank 025A (GP R 281).

Photograph 4:

View of NAPL beneath the tank foundation at Tank 025A (GP R 281).

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103.

Load Ticket: 20161

Date: 04-26-22

Scrap

Sold to: Allegheny

Location: Tank 281

Carrier: Allegheny

Steel / Ferrous

- ☐ ~~No. 1 P+S~~
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate.

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 83600 lbs

Tare Weight: 42100 lbs

Net Weight: 41700 lbs

NorthStar Rep. Signature: CH.

Received By: [signature]

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20036035
Date: 04/26/2022 12:04 PM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 150524.516
Loads: 9808

DT327-1109 - ALLEGHENY TRUCK 327-1109
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	20.6 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	83600.00	42400.00	41200.00

ALE VIEW

04-26-2022 12:05:25

19102

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 026A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 6 - 026A (GP R 282)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR282-01	GPR282-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00053	0.0026	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00065	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00028	0.0026	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Anthracene	SW8270E	Soil	1.3	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00065	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.2	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.8	0.17	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.2	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1	0.17	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Chrysene	SW8270E	Soil	1.8	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Fluorene	SW8270E	Soil	0.69	0.21	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Lead	SW6010D	Soil	1520	2.42	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0026	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	3.4	0.21	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4.3	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Pyrene	SW8270E	Soil	3.8	0.12	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0013	12/6/2022	12/8/2022
GPR282-01	GPR282-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0026	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00085	0.0023	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00057	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00027	0.0023	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Anthracene	SW8270E	Soil	0.34	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00057	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.3	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.44	0.16	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.38	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.5	0.16	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Chrysene	SW8270E	Soil	0.47	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Cumene	SW8260D	Soil	0.0013	0.0011	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Fluorene	SW8270E	Soil	0.19	0.2	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Lead	SW6010D	Soil	184	2.44	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0023	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Naphthalene	SW8270E	Soil	2.5	0.2	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.82	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Pyrene	SW8270E	Soil	0.44	0.12	12/6/2022	12/8/2022
GPR282-03	GPR282-03-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR282-03	GPR282-03-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.0016	0.0023	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0036	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0009	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0018	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0036	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Anthracene	SW8270E	Soil	0.99	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.0009	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	2.1	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	1.5	0.22	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	1.6	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.88	0.22	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Chrysene	SW8270E	Soil	1.8	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.0018	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0018	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Fluorene	SW8270E	Soil	0.37	0.28	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Lead	SW6010D	Soil	412	3.28	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0036	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Naphthalene	SW8270E	Soil	0.86	0.28	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Phenanthrene	SW8270E	Soil	2.8	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Pyrene	SW8270E	Soil	3	0.16	12/6/2022	12/8/2022
GPR282-05	GPR282-05-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0018	12/6/2022	12/9/2022
GPR282-05	GPR282-05-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0036	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00082	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Anthracene	SW8270E	Soil	0.52	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00082	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.96	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	1.2	0.2	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	1.3	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.71	0.2	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Chrysene	SW8270E	Soil	1	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Fluorene	SW8270E	Soil	0.38	0.26	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Lead	SW6010D	Soil	493	3.06	12/6/2022	12/8/2022
GPR282-07	GPR282-07-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	0.0009	0.0033	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Naphthalene	SW8270E	Soil	3.2	0.26	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Phenanthrene	SW8270E	Soil	1.7	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Pyrene	SW8270E	Soil	1.6	0.15	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR282-07	GPR282-07-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR282-08	GPR282-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.0057	0.0039	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00098	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.0014	0.0039	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Anthracene	SW8270E	Soil	1.5	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00098	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2	0.22	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.2	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.3	0.22	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Chrysene	SW8270E	Soil	2.2	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Cumene	SW8260D	Soil	0.0017	0.002	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00029	0.002	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Fluorene	SW8270E	Soil	1.5	0.27	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Lead	SW6010D	Soil	343	3.21	12/6/2022	12/8/2022

Table 6 - 026A (GP R 282)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR282-08	GPR282-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0039	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	7.7	0.27	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4.5	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Pyrene	SW8270E	Soil	4.4	0.16	12/6/2022	12/8/2022
GPR282-08	GPR282-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR282-08	GPR282-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.0055	0.0039	12/6/2022	12/12/2022
GPR282-10	GPR282-10-SS01	3	3.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.22	0.3	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.076	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.15	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.11	0.3	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Anthracene	SW8270E	Soil	9.6	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Benzene	SW8260D	Soil	0.094	0.076	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Benzo(a)anthracene	SW8270E	Soil	13	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Benzo(a)pyrene	SW8270E	Soil	12	2.1	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Benzo(b)fluoranthene	SW8270E	Soil	14	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Benzo(g,h,i)perylene	SW8270E	Soil	5.9	2.1	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Chrysene	SW8270E	Soil	12	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Cumene	SW8260D	Soil	0.072	0.15	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Ethyl Benzene	SW8260D	Soil	0.11	0.15	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Fluorene	SW8270E	Soil	8.2	2.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Lead	SW6010D	Soil	411	3.09	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.3	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Naphthalene	SW8270E	Soil	5.3	2.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Phenanthrene	SW8270E	Soil	28	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Pyrene	SW8270E	Soil	26	1.6	12/6/2022	12/8/2022
GPR282-10	GPR282-10-SS01	3	3.5	Toluene	SW8260D	Soil	0.44	0.15	12/6/2022	12/9/2022
GPR282-10	GPR282-10-SS01	3	3.5	Xylenes (total)	SW8260D	Soil	0.42	0.3	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00066	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00028	0.0026	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Anthracene	SW8270E	Soil	0.85	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00066	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.5	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	0.52	0.46	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	0.58	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.59	0.46	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Chrysene	SW8270E	Soil	0.53	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Fluorene	SW8270E	Soil	0.67	0.58	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Lead	SW6010D	Soil	295	2.46	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Naphthalene	SW8270E	Soil	9.6	0.58	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Phenanthrene	SW8270E	Soil	2.4	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Pyrene	SW8270E	Soil	0.81	0.35	12/6/2022	12/8/2022
GPR282-12	GPR282-12-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR282-12	GPR282-12-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022

Notes:
ND -- Not Detected
SS -- Soil Sample

GP R 284

GP R 280

GPR282-01

GPR282-03

GPR282-07

GPR282-05

GPR282-08

GP R 282

GPR282-10

GPR282-12

GP 1113

GP 279

GP R 281

Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- Associated Piping
- PESRM Soil Sample Location

0 50 100 Feet

1 inch = 50 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 026A (GP R 282)

Figure 6

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 6 - 026A (GP R 282).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 026A (GP R 282) prior to demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

S120103

Load Ticket: 20739

Date: 05/27/11

Scrap

Sold to: Allegheny

Location: Tanner 282

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate.

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 68620 lbs

Tare Weight: 42400 lbs

Net Weight: 26220 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20036584
Date: 05/12/2022 10:55 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 156016.236
Loads: 10203

DT327-1109 - ALLEGHENY TRUCK 327-1109
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	13.11 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	68620.00	42400.00	26220.00

05-12-2022 10:56:12
20739
THE MONSTER
by

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 004A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 7 - 004A (GP R 284)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR284-01	GPR284-01-SS01	2.5	3	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0031	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	1,2-Dibromoethane	SW8260D	Soil	ND	0.00078	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0031	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Anthracene	SW8270E	Soil	0.39	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Benzene	SW8260D	Soil	ND	0.00078	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Benzo(a)anthracene	SW8270E	Soil	1.5	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Benzo(a)pyrene	SW8270E	Soil	1.4	0.18	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Benzo(b)fluoranthene	SW8270E	Soil	1.6	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Benzo(g,h,i)perylene	SW8270E	Soil	0.64	0.18	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Chrysene	SW8270E	Soil	1.3	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Cumene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Fluorene	SW8270E	Soil	0.35	0.22	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Lead	SW6010D	Soil	112	2.64	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0031	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Naphthalene	SW8270E	Soil	3.2	0.22	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Phenanthrene	SW8270E	Soil	1	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Pyrene	SW8270E	Soil	1.9	0.13	12/6/2022	12/8/2022
GPR284-01	GPR284-01-SS01	2.5	3	Toluene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-01	GPR284-01-SS01	2.5	3	Xylenes (total)	SW8260D	Soil	ND	0.0031	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0027	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00068	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0027	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Anthracene	SW8270E	Soil	0.58	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00068	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.8	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2	0.18	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.2	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.2	0.18	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Chrysene	SW8270E	Soil	1.7	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Fluorene	SW8270E	Soil	0.45	0.23	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Lead	SW6010D	Soil	63.3	2.62	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0027	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Naphthalene	SW8270E	Soil	4.9	0.23	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1.4	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Pyrene	SW8270E	Soil	2	0.14	12/6/2022	12/8/2022
GPR284-03	GPR284-03-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-03	GPR284-03-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0027	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.75	0.12	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.029	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.058	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.54	0.12	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Anthracene	SW8270E	Soil	0.18	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Benzene	SW8260D	Soil	0.023	0.029	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.41	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.32	0.15	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.45	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.25	0.15	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Chrysene	SW8270E	Soil	1.1	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Cumene	SW8260D	Soil	0.081	0.058	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.087	0.058	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Fluorene	SW8270E	Soil	0.35	0.18	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Lead	SW6010D	Soil	125	2.26	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.12	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.65	0.18	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Pyrene	SW8270E	Soil	0.91	0.11	12/6/2022	12/8/2022
GPR284-05	GPR284-05-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.058	12/6/2022	12/9/2022
GPR284-05	GPR284-05-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.296	0.12	12/6/2022	12/9/2022
GPR284-07	GPR284-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00084	0.0031	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00077	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0015	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00054	0.0031	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Anthracene	SW8270E	Soil	ND	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00077	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.37	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.29	0.88	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.38	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.36	0.88	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Chrysene	SW8270E	Soil	0.56	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Cumene	SW8260D	Soil	0.0026	0.0015	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00047	0.0015	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Fluorene	SW8270E	Soil	ND	1.1	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Lead	SW6010D	Soil	186	2.59	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0031	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.93	1.1	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.62	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Pyrene	SW8270E	Soil	0.42	0.66	12/6/2022	12/8/2022
GPR284-07	GPR284-07-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0015	12/6/2022	12/12/2022
GPR284-07	GPR284-07-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00265	0.0031	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0005	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Anthracene	SW8270E	Soil	0.25	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.0005	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.2	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.1	0.16	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	1.2	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.48	0.16	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Chrysene	SW8270E	Soil	1	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Fluorene	SW8270E	Soil	0.25	0.2	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Lead	SW6010D	Soil	92.5	2.29	12/6/2022	12/8/2022

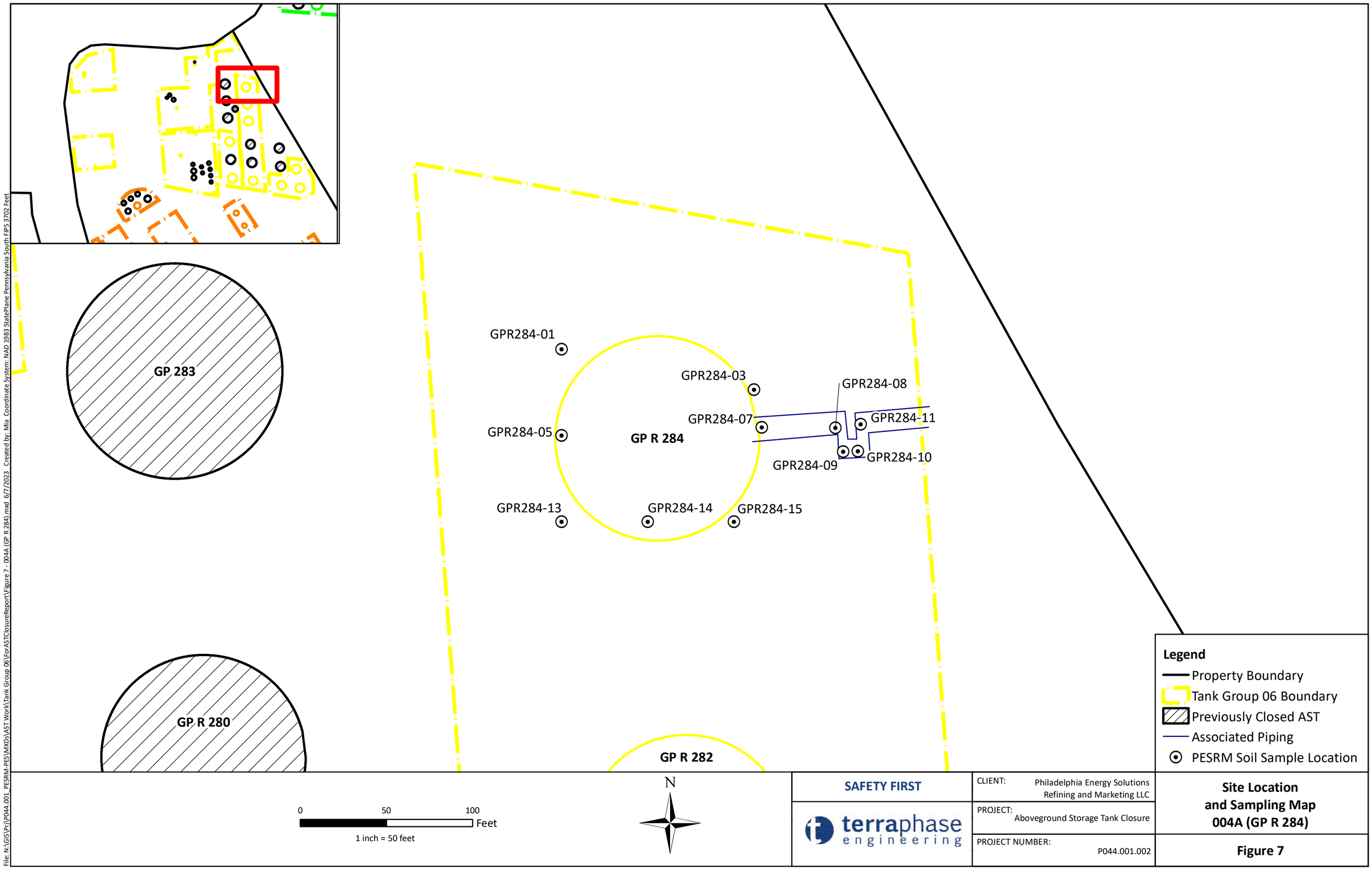
Table 7 - 004A (GP R 284)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR284-08	GPR284-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.92	0.2	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.47	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Pyrene	SW8270E	Soil	1.2	0.12	12/6/2022	12/8/2022
GPR284-08	GPR284-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-08	GPR284-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.002	12/6/2022	12/12/2022
GPR284-09	GPR284-09-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00066	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Anthracene	SW8270E	Soil	0.78	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00066	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.8	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	3	0.18	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	3.5	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.4	0.18	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Chrysene	SW8270E	Soil	2.5	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Cumene	SW8260D	Soil	0.0013	0.0013	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Fluorene	SW8270E	Soil	0.69	0.23	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Lead	SW6010D	Soil	89.5	2.71	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0026	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Naphthalene	SW8270E	Soil	5.2	0.23	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.3	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Pyrene	SW8270E	Soil	3.2	0.14	12/6/2022	12/8/2022
GPR284-09	GPR284-09-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0013	12/6/2022	12/9/2022
GPR284-09	GPR284-09-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.0024	0.0026	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0046	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0012	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0023	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0046	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Anthracene	SW8270E	Soil	0.64	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Benzene	SW8260D	Soil	ND	0.0012	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Benzo(a)anthracene	SW8270E	Soil	2.9	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Benzo(a)pyrene	SW8270E	Soil	3.3	0.19	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	3.6	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	1.5	0.19	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Chrysene	SW8270E	Soil	2.7	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Cumene	SW8260D	Soil	ND	0.0023	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0023	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Fluorene	SW8270E	Soil	0.56	0.23	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Lead	SW6010D	Soil	69.8	2.72	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0046	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Naphthalene	SW8270E	Soil	4.1	0.23	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Phenanthrene	SW8270E	Soil	1.5	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Pyrene	SW8270E	Soil	3.2	0.14	12/6/2022	12/8/2022
GPR284-10	DUP-52	4	4.5	Toluene	SW8260D	Soil	ND	0.0023	12/6/2022	12/9/2022
GPR284-10	DUP-52	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0046	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00059	0.0022	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00054	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0022	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Anthracene	SW8270E	Soil	0.72	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00054	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	2.8	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	2.8	0.16	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	3.1	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	1.3	0.16	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Chrysene	SW8270E	Soil	2.4	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Cumene	SW8260D	Soil	0.00096	0.0011	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Fluorene	SW8270E	Soil	0.45	0.2	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Lead	SW6010D	Soil	95.3	2.33	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0022	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Naphthalene	SW8270E	Soil	4.2	0.2	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Phenanthrene	SW8270E	Soil	2.3	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Pyrene	SW8270E	Soil	3.3	0.12	12/6/2022	12/8/2022
GPR284-10	GPR284-10-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0011	12/6/2022	12/9/2022
GPR284-10	GPR284-10-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	0.00196	0.0022	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0029	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00072	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0029	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Anthracene	SW8270E	Soil	0.66	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00072	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	3.4	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	3.2	0.19	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	3.8	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	1.6	0.19	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Chrysene	SW8270E	Soil	3	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Fluorene	SW8270E	Soil	0.26	0.24	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Lead	SW6010D	Soil	59.1	2.8	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0029	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Naphthalene	SW8270E	Soil	3.3	0.24	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Phenanthrene	SW8270E	Soil	1.7	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Pyrene	SW8270E	Soil	3.8	0.14	12/6/2022	12/8/2022
GPR284-11	GPR284-11-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0014	12/6/2022	12/9/2022
GPR284-11	GPR284-11-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	0.00169	0.0029	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00082	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Anthracene	SW8270E	Soil	2.7	0.87	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00082	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	20	0.87	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	17	1.2	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	19	0.87	12/6/2022	12/9/2022

Table 7 - 004A (GP R 284)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR284-13	GPR284-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	6.6	1.2	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Chrysene	SW8270E	Soil	17	0.87	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Fluorene	SW8270E	Soil	0.98	1.4	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Lead	SW6010D	Soil	87.6	3.38	12/6/2022	12/8/2022
GPR284-13	GPR284-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0033	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Naphthalene	SW8270E	Soil	6.7	1.4	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4.7	0.87	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Pyrene	SW8270E	Soil	23	0.87	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/6/2022	12/9/2022
GPR284-13	GPR284-13-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.0019	0.0033	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.002	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00051	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.001	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.002	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Anthracene	SW8270E	Soil	0.57	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00051	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.5	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.3	0.15	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.7	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.2	0.15	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Chrysene	SW8270E	Soil	2.4	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.001	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.001	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Fluorene	SW8270E	Soil	0.65	0.19	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Lead	SW6010D	Soil	30.1	2.16	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.002	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Naphthalene	SW8270E	Soil	2.8	0.19	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.7	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Pyrene	SW8270E	Soil	3.3	0.11	12/6/2022	12/8/2022
GPR284-14	GPR284-14-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.001	12/6/2022	12/9/2022
GPR284-14	GPR284-14-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.00126	0.002	12/6/2022	12/9/2022
GPR284-15	GPR284-15-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0021	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00053	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0021	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Anthracene	SW8270E	Soil	0.52	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Benzene	SW8260D	Soil	0.0002	0.00053	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.4	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2	0.15	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.7	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.1	0.15	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Chrysene	SW8270E	Soil	2.4	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Fluorene	SW8270E	Soil	0.038	0.19	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Lead	SW6010D	Soil	5090	2.22	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0021	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.049	0.19	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Pyrene	SW8270E	Soil	3.3	0.11	12/6/2022	12/8/2022
GPR284-15	GPR284-15-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.001	12/6/2022	12/12/2022
GPR284-15	GPR284-15-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0021	12/6/2022	12/12/2022

Notes:
ND -- Not Detected
SS -- Soil Sample
-- DUP-52 is a field duplicate associated with sample GPR284-10-SS01.



SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 004A (GP R 284)

Figure 7

File: N:\GIS\Pr\[P044.001_PESRM-PES]\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 7 - 004A (GP R 284).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

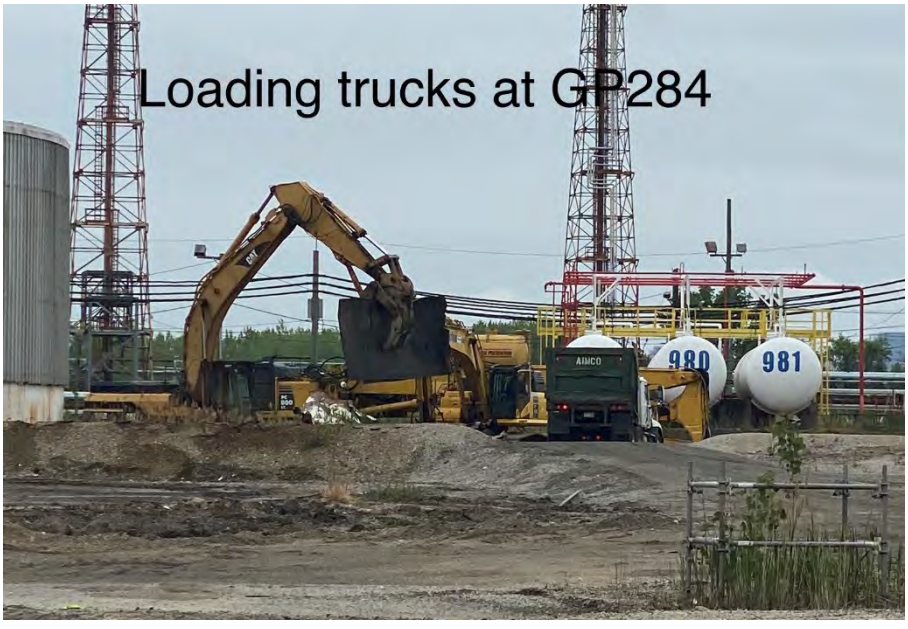
View of Tank 004A (GP R 284) prior to demolition.

Photograph 2:

View of Tank 004A (GP R 284) being cleaned.

Photograph 3:

View of Tank 004A (GP R 284) during demolition.



Photograph 4:

View of scrap cleanup at Tank 004A (GP R 284).

NorthStar Contracting Group, Inc.

PES Project Load Ticket

Load Ticket: 20714

Date: 05 12 22

Scrap

Sold to: Allegheny

Location: Toledo, OH

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 78720 lbs

Tare Weight: 401180 lbs

Net Weight: 382140 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20036558
Date: 05/12/2022 7:05 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 155725.556
Loads: 10185

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

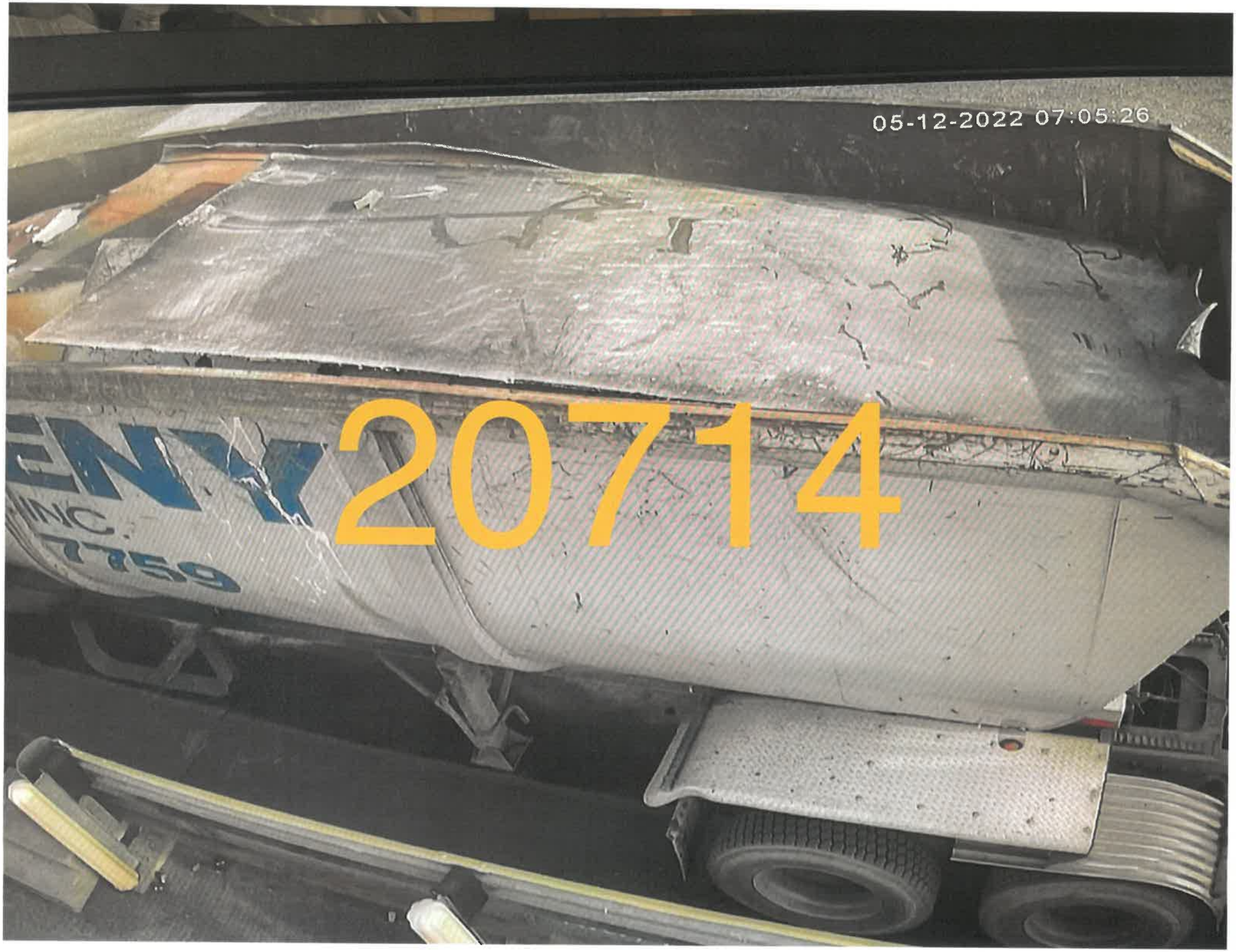
Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	19.12 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	78720.00	40480.00	38240.00


05-12-2022 07:05:26
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ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 027A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

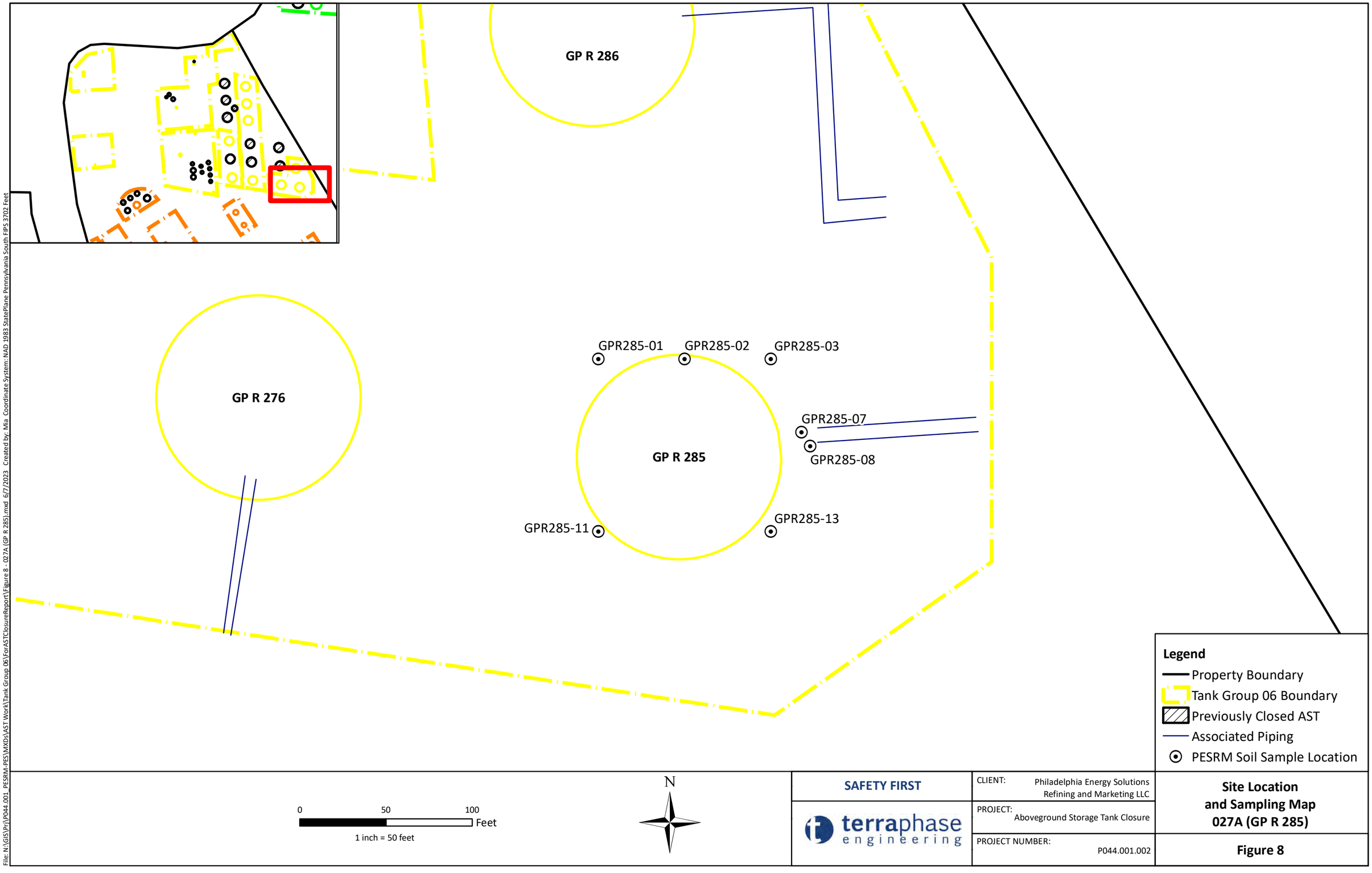
Table 8 - 027A (GP R 285)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR285-01	GPR285-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	28	0.22	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.054	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.11	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	30	0.22	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Anthracene	SW8270E	Soil	0.71	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Benzene	SW8260D	Soil	4	0.054	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.4	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.3	0.18	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.5	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.7	0.18	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Chrysene	SW8270E	Soil	1.4	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Cumene	SW8260D	Soil	4.1	0.11	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	7.4	0.11	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Fluorene	SW8270E	Soil	0.68	0.23	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Lead	SW6010D	Soil	255	2.76	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.22	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	11	1.2	12/7/2022	12/11/2022
GPR285-01	GPR285-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.1	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Pyrene	SW8270E	Soil	1.6	0.14	12/7/2022	12/10/2022
GPR285-01	GPR285-01-SS01	4.5	5	Toluene	SW8260D	Soil	12	0.11	12/7/2022	12/14/2022
GPR285-01	GPR285-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	27.4	0.22	12/7/2022	12/14/2022
GPR285-02	GPR285-02-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	0.00063	0.0031	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00078	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.00077	0.0031	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Anthracene	SW8270E	Soil	0.7	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Benzene	SW8260D	Soil	0.00026	0.00078	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	2.2	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	3.2	0.19	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	3.5	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.8	0.19	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Chrysene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Cumene	SW8260D	Soil	0.00021	0.0016	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	0.00036	0.0016	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Fluorene	SW8270E	Soil	0.3	0.24	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Lead	SW6010D	Soil	80.6	2.82	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0031	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Naphthalene	SW8270E	Soil	6.1	0.24	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1.7	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Pyrene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-02	GPR285-02-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-02	GPR285-02-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0031	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0025	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00063	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0012	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0025	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Anthracene	SW8270E	Soil	0.68	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00063	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.2	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.8	0.18	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.4	0.18	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Chrysene	SW8270E	Soil	1.3	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0012	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0012	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Fluorene	SW8270E	Soil	0.26	0.23	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Lead	SW6010D	Soil	296	2.67	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0025	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Naphthalene	SW8270E	Soil	4.1	0.23	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1.6	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Pyrene	SW8270E	Soil	1.6	0.14	12/7/2022	12/10/2022
GPR285-03	GPR285-03-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0012	12/7/2022	12/12/2022
GPR285-03	GPR285-03-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0025	12/7/2022	12/12/2022
GPR285-07	GPR285-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	210	3.5	12/7/2022	12/12/2022
GPR285-07	GPR285-07-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.22	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.44	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	120	0.88	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Anthracene	SW8270E	Soil	0.59	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Benzene	SW8260D	Soil	12	0.22	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.41	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.4	0.19	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.59	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.33	0.19	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Chrysene	SW8270E	Soil	0.47	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Cumene	SW8260D	Soil	18	0.44	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	51	0.44	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Fluorene	SW8270E	Soil	0.81	0.24	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Lead	SW6010D	Soil	287	2.8	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.88	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Naphthalene	SW8270E	Soil	15	1.2	12/7/2022	12/11/2022
GPR285-07	GPR285-07-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.7	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Pyrene	SW8270E	Soil	0.83	0.14	12/7/2022	12/10/2022
GPR285-07	GPR285-07-SS01	4.5	5	Toluene	SW8260D	Soil	17	0.44	12/7/2022	12/13/2022
GPR285-07	GPR285-07-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	94.5	0.88	12/7/2022	12/13/2022
GPR285-08	DUP-53	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0035	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00086	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0017	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0035	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Anthracene	SW8270E	Soil	0.8	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Benzene	SW8260D	Soil	ND	0.00086	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.9	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.7	0.19	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	3	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.6	0.19	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Chrysene	SW8270E	Soil	1.8	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Cumene	SW8260D	Soil	ND	0.0017	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0017	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Fluorene	SW8270E	Soil	0.41	0.24	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Lead	SW6010D	Soil	212	2.83	12/7/2022	12/10/2022

Table 8 - 027A (GP R 285)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR285-08	DUP-53	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0035	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Naphthalene	SW8270E	Soil	6.9	0.24	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Phenanthrene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Pyrene	SW8270E	Soil	1.4	0.14	12/7/2022	12/10/2022
GPR285-08	DUP-53	4.5	5	Toluene	SW8260D	Soil	ND	0.0017	12/7/2022	12/12/2022
GPR285-08	DUP-53	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0035	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00082	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0033	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Anthracene	SW8270E	Soil	0.5	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00082	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.2	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.8	0.18	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	1.8	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1	0.18	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Chrysene	SW8270E	Soil	1.2	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Fluorene	SW8270E	Soil	0.38	0.23	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Lead	SW6010D	Soil	160	2.76	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0033	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	7	0.23	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1.5	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Pyrene	SW8270E	Soil	1.2	0.14	12/7/2022	12/10/2022
GPR285-08	GPR285-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-08	GPR285-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0033	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0008	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Anthracene	SW8270E	Soil	0.77	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.0008	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.6	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	1.9	0.19	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.2	0.19	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Chrysene	SW8270E	Soil	1.4	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Fluorene	SW8270E	Soil	0.4	0.24	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Lead	SW6010D	Soil	113	2.84	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Naphthalene	SW8270E	Soil	7.6	0.24	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.5	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Pyrene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-11	GPR285-11-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0016	12/7/2022	12/12/2022
GPR285-11	GPR285-11-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0032	12/7/2022	12/12/2022
GPR285-13	GPR285-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	80	4.2	12/7/2022	12/12/2022
GPR285-13	GPR285-13-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.11	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.21	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	80	4.2	12/7/2022	12/12/2022
GPR285-13	GPR285-13-SS01	4.5	5	Anthracene	SW8270E	Soil	2	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Benzene	SW8260D	Soil	1.1	0.11	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	4.9	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	4.9	0.19	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	5.8	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	4.5	0.19	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Chrysene	SW8270E	Soil	4.4	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Cumene	SW8260D	Soil	12	0.21	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	23	0.21	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	Fluorene	SW8270E	Soil	1.1	0.23	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Lead	SW6010D	Soil	129	2.78	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.42	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	Naphthalene	SW8270E	Soil	13	1.2	12/7/2022	12/11/2022
GPR285-13	GPR285-13-SS01	4.5	5	Phenanthrene	SW8270E	Soil	7.3	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Pyrene	SW8270E	Soil	6.8	0.14	12/7/2022	12/10/2022
GPR285-13	GPR285-13-SS01	4.5	5	Toluene	SW8260D	Soil	6.9	0.21	12/7/2022	12/13/2022
GPR285-13	GPR285-13-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	39	0.42	12/7/2022	12/13/2022

Notes:
ND -- Not Detected
SS -- Soil Sample
-- DUP-53 is a field duplicate associated with sample GPR285-08-SS01.



SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 027A (GP R 285)

Figure 8

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 8 - 027A (GP R 285).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Photograph 1:

View of Tank 027A (GP R 285) during to demolition.

Photograph 2:

View of cleanup at Tank 027A (GP R 285).

Photograph 3:

View of scrap material load out at Tank 027A (GP R 285).

Photograph 4:

View of scrap material load out at Tank 027A (GP R 285).

NorthStar Contracting Group, Inc.

PES Project Load Ticket

Load Ticket: 20305

Date: 05.02.22.

Scrap

Sold to: Allegheny

Location: Tank 205

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate.

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #: _____

Gross Weight: 58420 lbs

Tare Weight: 40480 lbs

Net Weight: 17940 lbs

NorthStar Rep. Signature: _____

Received By: _____

Non-Haz / ACM / Special Waste

Activity Location: _____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility: _____

Carrier: _____

Truck #: _____

Container #: _____

Manifest #: _____

Profile / Approval #: _____

Scale Info

Scale Ticket #: _____

Gross Weight: _____

Tare weight: _____

Net weight: _____

Net Kilogram Conversion (PCB Only): _____

NorthStar Rep. Signature: _____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20036170
Date: 05/02/2022 8:57 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

Order Number: 001
SCRAP REMOVAL
Tons: 152407.506
Loads: 9935

DT1-56 - ALLEGHENY TRUCK 1 W/TRAILER 56
CARLAD - CARLA DAVILA

Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	8.97 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	58420.00	40480.00	17940.00

05-02-2022 08:56:58
20305
SCALE VIEW

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 028A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ------→ Conduct confirmatory sampling ------→ See end of this section for options on submission and maintenance of closure records ------→ Do not complete item C.2. below.

☐ YES ------→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

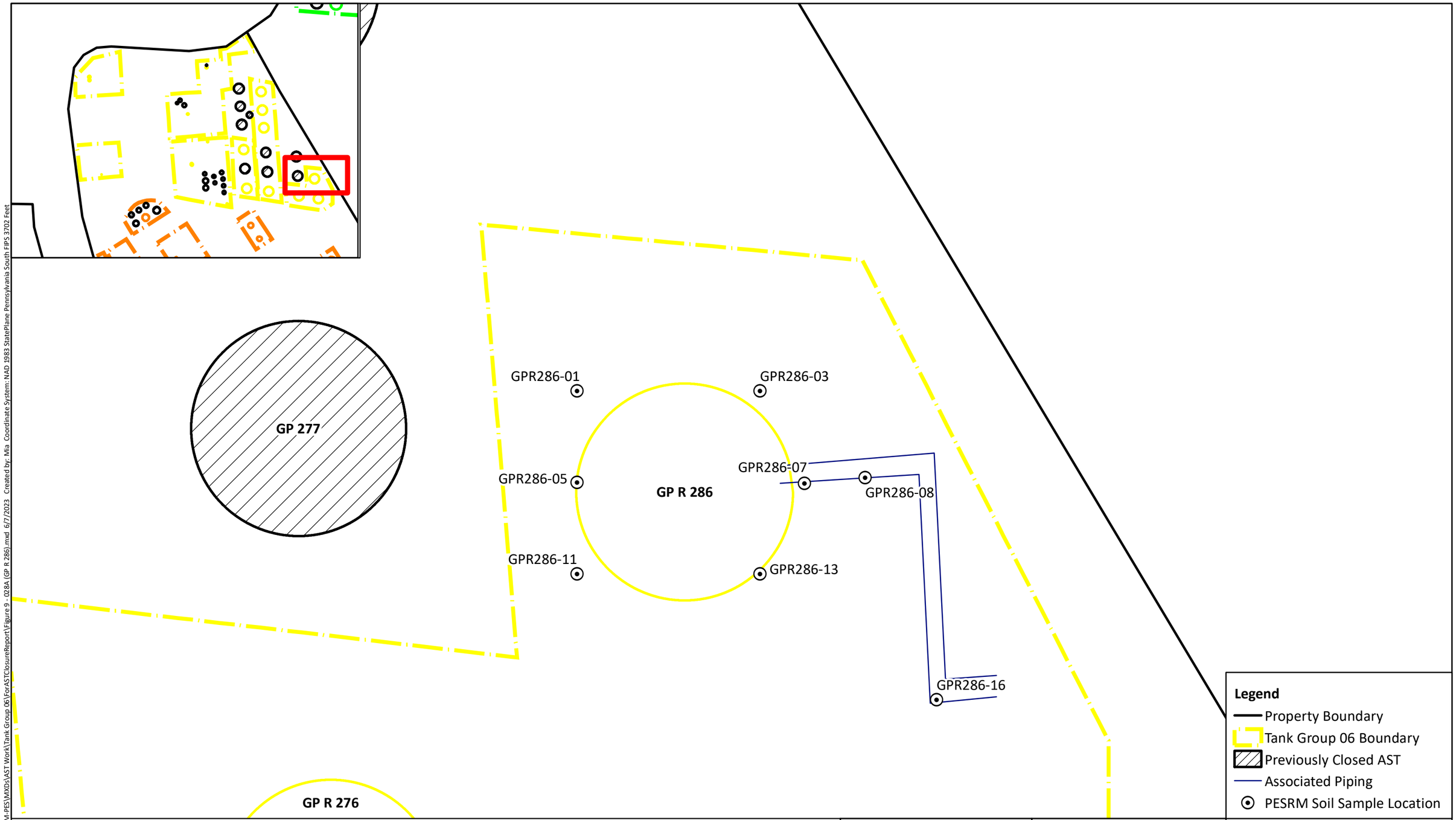
Table 9 - 028A (GP P 286)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR286-01	GPR286-01-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	5.2	0.25	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.062	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.12	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	0.37	0.25	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Anthracene	SW8270E	Soil	1.2	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Benzene	SW8260D	Soil	0.066	0.062	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	3.1	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	3.3	0.19	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	4.5	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	2.3	0.19	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Chrysene	SW8270E	Soil	3.3	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Cumene	SW8260D	Soil	11	0.12	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	1.9	0.12	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Fluorene	SW8270E	Soil	1	0.24	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Lead	SW6010D	Soil	143	2.8	12/8/2022	12/10/2022
GPR286-01	GPR286-01-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.25	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Naphthalene	SW8270E	Soil	14	1.2	12/8/2022	12/15/2022
GPR286-01	GPR286-01-SS01	4.5	5	Phenanthrene	SW8270E	Soil	4.9	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Pyrene	SW8270E	Soil	5.5	0.14	12/8/2022	12/11/2022
GPR286-01	GPR286-01-SS01	4.5	5	Toluene	SW8260D	Soil	1.2	0.12	12/8/2022	12/13/2022
GPR286-01	GPR286-01-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	7.1	0.25	12/8/2022	12/13/2022
GPR286-03	GPR286-03-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00086	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Anthracene	SW8270E	Soil	0.39	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00086	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.97	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	1.1	0.2	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	1.4	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	0.67	0.2	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Chrysene	SW8270E	Soil	0.95	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Cumene	SW8260D	Soil	0.00039	0.0017	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Fluorene	SW8270E	Soil	0.27	0.25	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Lead	SW6010D	Soil	295	2.94	12/8/2022	12/10/2022
GPR286-03	GPR286-03-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Naphthalene	SW8270E	Soil	6.4	0.25	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Phenanthrene	SW8270E	Soil	1.4	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Pyrene	SW8270E	Soil	1.1	0.15	12/8/2022	12/11/2022
GPR286-03	GPR286-03-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-03	GPR286-03-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0025	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00063	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0013	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0025	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Anthracene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.00063	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	ND	0.15	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	ND	0.15	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Chrysene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.0013	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.0013	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Fluorene	SW8270E	Soil	ND	0.19	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Lead	SW6010D	Soil	4.98	2.26	12/8/2022	12/10/2022
GPR286-05	GPR286-05-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0025	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Naphthalene	SW8270E	Soil	ND	0.19	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Phenanthrene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Pyrene	SW8270E	Soil	ND	0.11	12/8/2022	12/11/2022
GPR286-05	GPR286-05-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.0013	12/8/2022	12/12/2022
GPR286-05	GPR286-05-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.0025	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.0007	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Anthracene	SW8270E	Soil	0.56	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.0007	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.7	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2	0.18	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.5	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.2	0.18	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Chrysene	SW8270E	Soil	1.8	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Fluorene	SW8270E	Soil	0.36	0.23	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Lead	SW6010D	Soil	142	2.66	12/8/2022	12/10/2022
GPR286-07	GPR286-07-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Naphthalene	SW8270E	Soil	6	0.23	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Phenanthrene	SW8270E	Soil	1.9	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Pyrene	SW8270E	Soil	2.3	0.14	12/8/2022	12/11/2022
GPR286-07	GPR286-07-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0014	12/8/2022	12/12/2022
GPR286-07	GPR286-07-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0028	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.00085	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Anthracene	SW8270E	Soil	0.077	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.00085	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.2	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.22	0.19	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.25	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.13	0.19	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Chrysene	SW8270E	Soil	0.2	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Fluorene	SW8270E	Soil	0.054	0.24	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Lead	SW6010D	Soil	182	2.88	12/8/2022	12/10/2022

Table 9 - 028A (GP P 286)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR286-08	GPR286-08-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Naphthalene	SW8270E	Soil	0.59	0.24	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.24	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Pyrene	SW8270E	Soil	0.34	0.14	12/8/2022	12/11/2022
GPR286-08	GPR286-08-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.0017	12/8/2022	12/12/2022
GPR286-08	GPR286-08-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.0034	12/8/2022	12/12/2022
GPR286-11	GPR286-11-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.1	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.026	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.052	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.1	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Anthracene	SW8270E	Soil	0.094	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.026	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	0.27	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	0.33	0.15	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	0.39	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	0.21	0.15	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Chrysene	SW8270E	Soil	0.29	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Cumene	SW8260D	Soil	0.57	0.052	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.052	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Fluorene	SW8270E	Soil	0.071	0.18	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Lead	SW6010D	Soil	48.9	2.19	12/8/2022	12/10/2022
GPR286-11	GPR286-11-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.1	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Naphthalene	SW8270E	Soil	1.2	0.18	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Phenanthrene	SW8270E	Soil	0.35	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Pyrene	SW8270E	Soil	0.38	0.11	12/8/2022	12/11/2022
GPR286-11	GPR286-11-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.052	12/8/2022	12/14/2022
GPR286-11	GPR286-11-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	0.101	0.1	12/8/2022	12/14/2022
GPR286-13	GPR286-13-SS01	4.5	5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	1,2-Dibromoethane	SW8260D	Soil	ND	0.001	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	1,2-Dichloroethane	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Anthracene	SW8270E	Soil	0.9	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Benzene	SW8260D	Soil	ND	0.001	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Benzo(a)anthracene	SW8270E	Soil	1.7	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Benzo(a)pyrene	SW8270E	Soil	2.5	0.21	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Benzo(b)fluoranthene	SW8270E	Soil	2.8	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Benzo(g,h,i)perylene	SW8270E	Soil	1.9	0.21	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Chrysene	SW8270E	Soil	1.8	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Cumene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Ethyl Benzene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Fluorene	SW8270E	Soil	0.46	0.26	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Lead	SW6010D	Soil	302	3.13	12/8/2022	12/10/2022
GPR286-13	GPR286-13-SS01	4.5	5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Naphthalene	SW8270E	Soil	10	0.26	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Phenanthrene	SW8270E	Soil	2.1	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Pyrene	SW8270E	Soil	1.6	0.16	12/8/2022	12/11/2022
GPR286-13	GPR286-13-SS01	4.5	5	Toluene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-13	GPR286-13-SS01	4.5	5	Xylenes (total)	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	1,2,4-Trimethylbenzene	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	1,2-Dibromoethane	SW8260D	Soil	ND	0.001	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	1,2-Dichloroethane	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	1,3,5-Trimethylbenzene	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Anthracene	SW8270E	Soil	ND	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Benzene	SW8260D	Soil	ND	0.001	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Benzo(a)anthracene	SW8270E	Soil	0.036	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Benzo(a)pyrene	SW8270E	Soil	ND	0.2	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Benzo(b)fluoranthene	SW8270E	Soil	ND	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Benzo(g,h,i)perylene	SW8270E	Soil	ND	0.2	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Chrysene	SW8270E	Soil	0.032	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Cumene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Ethyl Benzene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Fluorene	SW8270E	Soil	ND	0.24	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Lead	SW6010D	Soil	7.52	2.93	12/8/2022	12/10/2022
GPR286-16	GPR286-16-SS01	4	4.5	Methyl tert-butyl ether	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Naphthalene	SW8270E	Soil	ND	0.24	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Phenanthrene	SW8270E	Soil	0.031	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Pyrene	SW8270E	Soil	0.06	0.15	12/8/2022	12/11/2022
GPR286-16	GPR286-16-SS01	4	4.5	Toluene	SW8260D	Soil	ND	0.002	12/8/2022	12/12/2022
GPR286-16	GPR286-16-SS01	4	4.5	Xylenes (total)	SW8260D	Soil	ND	0.004	12/8/2022	12/12/2022

Notes:
ND -- Not Detected
SS -- Soil Sample



File: N:\GIS\Pr\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 9 - 028A (GP R 286).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 028A (GP R 286)

Figure 9

Photograph 1:

View of cleanup activities at Tank 028A (GP R 286) following demolition.

NorthStar Contracting Group, Inc.

PES Project Load Ticket

Load Ticket: 20448

Date: 05.05.22.

Scrap

Sold to: Allegheny

Location: Tank 286.

Carrier: Allegheny

Steel / Ferrous

- ☐ No. 1 P+S
- ☐ No. 2 Heavy Melt
- ☐ Cast Iron
- ☐ Mixed
- ☐ Pipe
- ☐ Light Iron
- ☐ Re-Bar
- ☐ Other Tank Plate.

Non-Ferrous

- ☐ Insulated Copper Wire
- ☐ No. 1 Copper Wire
- ☐ Brass
- ☐ Aluminum
- ☐ Stainless, Grade_____
- ☐ Other Alloy, Grade_____
- ☐ Mixed
- ☐ Other: _____

Condition

- ☐ Prepared
- ☐ Unprepared
- ☐ Green Waste
- ☐ Concrete
- ☐ Masonry
- ☐ Mixed Masonry
- ☐ Wood Only
- ☐ Demo Debris (C&D)
- ☐ Dirt / Fill
- ☐ Sand Fill
- ☐ Crushed Stone
- ☐ Other:_____

Scale Ticket #:_____

Gross Weight: 66900 lbs

Tare Weight: 42000 lbs

Net Weight: 24900 lbs

NorthStar Rep. Signature:_____

Received By:_____

Non-Haz / ACM / Special Waste

Activity Location:_____

Waste Stream

- ☐ C&D Demolition Debris
- ☐ Non-Friable ACM
- ☐ Friable ACM
- ☐ PB WWTP Sludge
- ☐ GP WWTP Sludge
- ☐ Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 –D043)
- ☐ Process Haz Waste
- ☐ Demo Debris (C&D)
- ☐ Non-Haz Waste (Solid)
- ☐ Non-Haz Waste (Liquid)
- ☐ PCB (Non-TSCA)
- ☐ PCB (TSCA)

Disposal Facility:_____

Carrier:_____

Truck #:_____

Container #:_____

Manifest #:_____

Profile / Approval #:_____

Scale Info

Scale Ticket #:_____

Gross Weight:_____

Tare weight:_____

Net weight:_____

Net Kilogram Conversion (PCB Only):_____

NorthStar Rep. Signature:_____

HILCO REDEVELOPEMENT PARTNERS
3144 W. PASSYUNK AVE

PHILADELPHIA PA, 19145

Ticket #: 20036311
Date: 05/05/2022 7:40 AM
Phone: ( ) -
Fax: ( ) -

Customer: HILCO
HILCO

,

Order Number: 001
SCRAP REMOVAL
Tons: 153509.166
Loads: 10028

DT06-103 - ALLEGHENY TRUCK 06 W/TRAILER 103
CARLAD - CARLA DAVILA

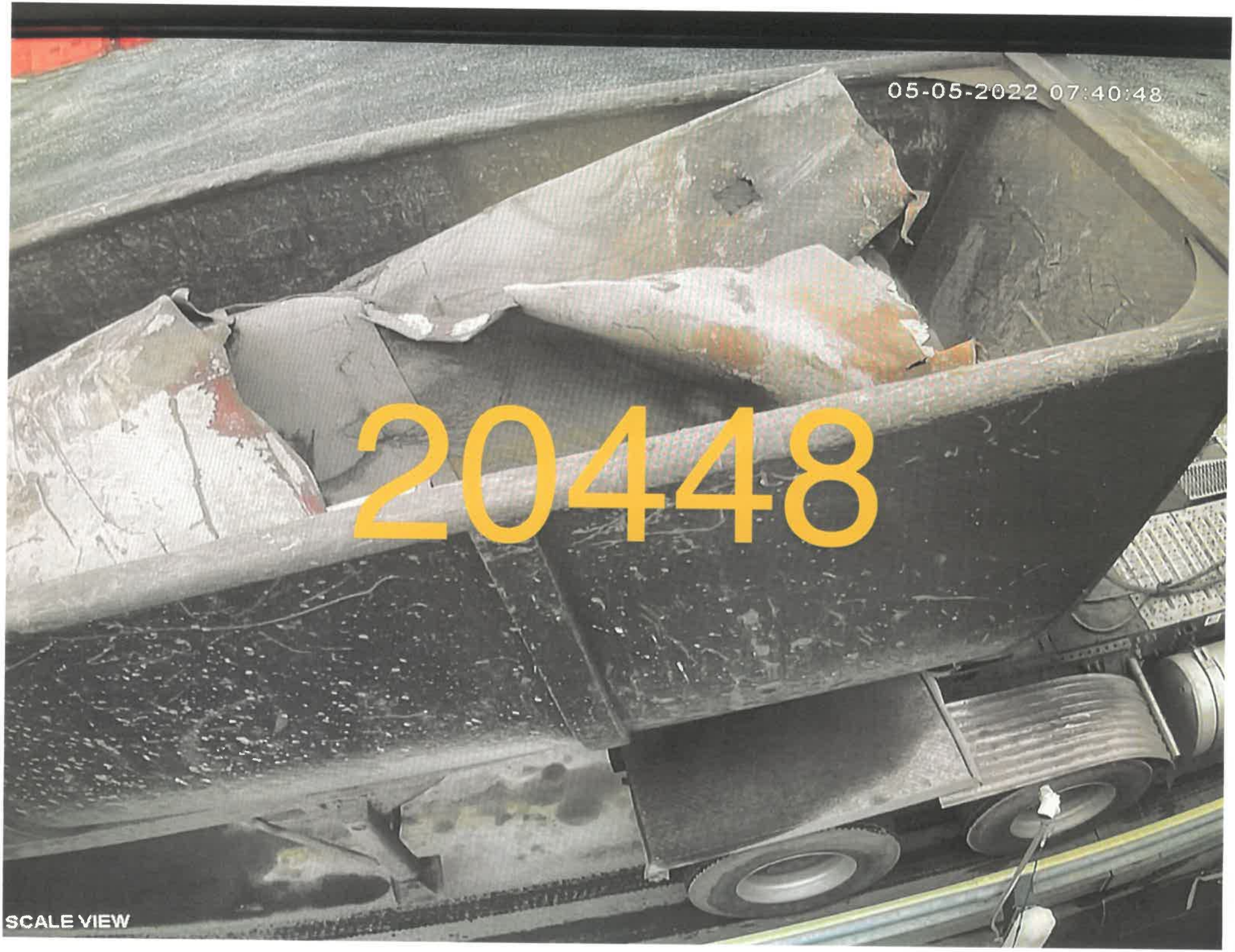
Remarks: SCRAP REMOVAL

Signature: _____

Material	Quantity	Price	Material $	Delivery $	Misc $	Tax $	Line Total $
SCRAP	12.45 tn						

Weight Information

Material	Gross	Tare	Net
SCRAP	66900.00	42000.00	24900.00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20448
SCALE VIEW

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 066A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See summary in figure section below							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.
N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: At multiple AST locations, Site Assessment and Site Characterization sampling could not be completed because thick concrete tank foundations prevented access to the underlying soil and standing water which prevented soil sampling was present in some cases. Because of these physical obstructions, Site Characterization sampling results generated by Evergreen in AOI 7 were used to determine the sources of contamination and to determine the extent of migration of regulated substances in soil and groundwater. As such, figures and tables presenting soil data generated by PESRM for these ASTs (049A, 050A, 066A, 022A, and 003A) have not been attached as the soil has not yet been sampled by PESRM.

Photograph 1:

View of Tank 066A (GP R 973) prior to demolition.

Photograph 2:

View of Tank 066A (GP R 973) being cleaned.

Photograph 3:

View of the interior of Tank 066A (GP R 973) during cleaning.

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 050A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ------→ Conduct confirmatory sampling ------→ See end of this section for options on submission and maintenance of closure records ------→ Do not complete item C.2. below.

☐ YES ------→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

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I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See summary in figure section below							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

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N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: At multiple AST locations, Site Assessment and Site Characterization sampling could not be completed because thick concrete tank foundations prevented access to the underlying soil and standing water which prevented soil sampling was present in some cases. Because of these physical obstructions, Site Characterization sampling results generated by Evergreen in AOI 7 were used to determine the sources of contamination and to determine the extent of migration of regulated substances in soil and groundwater. As such, figures and tables presenting soil data generated by PESRM for these ASTs (049A, 050A, 066A, 022A, and 003A) have not been attached as the soil has not yet been sampled by PESRM.

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 049A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO - - - - - → Conduct confirmatory sampling - - - - - → See end of this section for options on submission and maintenance of closure records - - - - - → Do not complete item C.2. below.

☐ YES - - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ - - - - → Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES - - - - → Remove or remediate contaminated soil - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ NO - - - - → Continue Interim Remedial Actions - - - - → See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO - - - - → Conduct confirmatory sampling - - - - → See end of this section for options on submission and maintenance of closure records.

☐ YES - - - - → Report release to DEP within 24 hours - - - - → Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action - - - - → See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

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(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See summary in figure section below							/ /	/ /
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N - Samples placed in soil sample vial without a preservative present.

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Facility Name and ID: -

County:

Township/Borough: At multiple AST locations, Site Assessment and Site Characterization sampling could not be completed because thick concrete tank foundations prevented access to the underlying soil and standing water which prevented soil sampling was present in some cases. Because of these physical obstructions, Site Characterization sampling results generated by Evergreen in AOI 7 were used to determine the sources of contamination and to determine the extent of migration of regulated substances in soil and groundwater. As such, figures and tables presenting soil data generated by PESRM for these ASTs (049A, 050A, 066A, 022A, and 003A) have not been attached as the soil has not yet been sampled by PESRM.

ABOVEGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 011A (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 51 - 33624

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 15 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1). Was obvious contamination observed while excavating, sampling or removing the tank system?

☒ NO ------→ Conduct confirmatory sampling ------→ See end of this section for options on submission and maintenance of closure records ------→ Do not complete item C.2. below.

☐ YES ------→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

_____ ----→ Complete item C.2. below.

2). Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES ----→ Remove or remediate contaminated soil ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ NO ----→ Continue Interim Remedial Actions ----→ See end of this section for options on submission and maintenance of closure records.

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO ----→ Conduct confirmatory sampling ----→ See end of this section for options on submission and maintenance of closure records.

☐ YES ----→ Report release to DEP within 24 hours ----→ Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills):_____

_____

_____

_____

Continue with corrective action----→ See end of this section for options on submission and maintenance of closure records.

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Kevin Long , hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn
(Print Name)
falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Signature of Person Performing Site Assessment	/ / Date
Principal Consultant	Terraphase Engineering Inc.
Title of Person Performing Site Assessment	Name of Company Performing Site Assessment
609-236-8171 x93	
Telephone Number of Person Performing Site Assessment	

ABOVEGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 51 - 33624

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
See attached summary table							/ /	/ /
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[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.

N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: -

County:

Township/Borough: See attached Figure

Table 2 - 011A (GP R 1047)
Sample/Analysis Information (Attachment for Section III.)

Location	Sample ID	Start Depth (ft)	End Depth (ft)	Parameter	Analytical Method	Media	Results (mg/kg)	Detection Limit (mg/kg)	Date Sample Taken	Date Sample Analyzed
GPR1047-03	DUP-54	4	4.5	pH	SW9045D	Soil	10.7	0	12/8/2022	12/14/2022
GPR1047-01	GPR1047-01-SS01	4.5	5	pH	SW9045D	Soil	8.7	0	12/8/2022	12/14/2022
GPR1047-02	GPR1047-02-SS01	4	4.5	pH	SW9045D	Soil	7.5	0	12/8/2022	12/14/2022
GPR1047-03	GPR1047-03-SS01	4	4.5	pH	SW9045D	Soil	8.7	0	12/8/2022	12/14/2022
GPR1047-04	GPR1047-04-SS01	4.5	5	pH	SW9045D	Soil	8.8	0	12/8/2022	12/14/2022
GPR1047-06	GPR1047-06-SS01	4	4.5	pH	SW9045D	Soil	9	0	12/8/2022	12/14/2022
GPR1047-07	GPR1047-07-SS01	4.5	5	pH	SW9045D	Soil	10.7	0	12/8/2022	12/14/2022

Notes:
SS -- Soil Sample
-- DUP-54 is a field duplicate associated with sample GPR1047-03-SS01.

GPR1047-01

GPR1047-02

GPR1047-03

GPR1047-04

GP R 1047

GPR1047-06

GPR1047-07

Legend

- Property Boundary
- Tank Group 06 Boundary
- Previously Closed AST
- PESRM Soil Sample Location

0 10 20 30 Feet

1 inch = 10 feet

N

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Aboveground Storage Tank Closure

PROJECT NUMBER: P044.001.002

Site Location and Sampling Map 011A (GP R 1047)

Figure 2

File: N:\GIS\Prj\P044.001_PESRM-PES\MXDs\AST Work\Tank Group 06\ForASTClosureReport\Figure 2 - 011A (GP R 1047).mxd 6/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L2268455
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/13/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268455-01	GPR281-01-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:30	12/06/22
L2268455-02	GPR281-07-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:45	12/06/22
L2268455-03	GPR281-08-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:55	12/06/22
L2268455-04	GPR281-10-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:05	12/06/22
L2268455-05	GPR281-11-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:20	12/06/22
L2268455-06	GPR281-12-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:30	12/06/22
L2268455-07	GPR282-01-SS01	SOIL	PHILADELPHIA, PA	12/06/22 11:30	12/06/22
L2268455-08	GPR282-03-SS01	SOIL	PHILADELPHIA, PA	12/06/22 11:40	12/06/22
L2268455-09	GPR282-05-SS01	SOIL	PHILADELPHIA, PA	12/06/22 11:50	12/06/22
L2268455-10	GPR282-07-SS01	SOIL	PHILADELPHIA, PA	12/06/22 12:00	12/06/22
L2268455-11	GPR282-08-SS01	SOIL	PHILADELPHIA, PA	12/06/22 12:10	12/06/22
L2268455-12	GPR282-10-SS01	SOIL	PHILADELPHIA, PA	12/06/22 12:20	12/06/22
L2268455-13	GPR282-12-SS01	SOIL	PHILADELPHIA, PA	12/06/22 12:30	12/06/22
L2268455-14	GPR284-01-SS01	SOIL	PHILADELPHIA, PA	12/06/22 13:30	12/06/22
L2268455-15	GPR284-03-SS01	SOIL	PHILADELPHIA, PA	12/06/22 13:45	12/06/22
L2268455-16	GPR284-05-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:00	12/06/22
L2268455-17	GPR284-07-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:10	12/06/22
L2268455-18	GPR284-08-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:20	12/06/22
L2268455-19	GPR284-09-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:30	12/06/22
L2268455-20	GPR284-10-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:35	12/06/22
L2268455-21	GPR284-11-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:40	12/06/22
L2268455-22	GPR284-13-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:50	12/06/22
L2268455-23	GPR284-14-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:55	12/06/22
L2268455-24	GPR284-15-SS01	SOIL	PHILADELPHIA, PA	12/06/22 15:00	12/06/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268455-25	DUP-52	SOIL	PHILADELPHIA, PA	12/06/22 11:00	12/06/22
L2268455-26	TB-221206	WATER	PHILADELPHIA, PA	12/06/22 00:00	12/06/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2268455-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (285%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268455-12: The internal standard (IS) response for fluorobenzene (24%), chlorobenzene-d5 (27%), and 1,4-dichlorobenzene-d4 (27%) and surrogate recoveries for 1,2-dichloroethane-d4 (133%) and dibromofluoromethane (135%) were outside the acceptance criteria. A second low-level vial was analyzed, but no data was acquired due to instrument error. Since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2268455-16: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2268455-16: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (194%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268455-17: The internal standard (IS) response(s) for 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (131%) and 4-bromofluorobenzene (293%) were outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (46%) and 4-bromofluorobenzene (196%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative (continued)

Microextractables

The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2268455-26, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics

L2268455-06D, -12D, -17D, and -22D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2268455-13: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

Total Metals

The WG1720509-3 MS recovery for lead (13%), performed on L2268455-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 12/13/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:33
Analyst: JIC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00052	J	mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 03:48
Analyst: JIC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0016	0.00016	1
Benzene	ND		mg/kg	0.00040	0.00013	1
1,2-Dichloroethane	ND		mg/kg	0.00081	0.00021	1
Toluene	ND		mg/kg	0.00081	0.00044	1
1,2-Dibromoethane	ND		mg/kg	0.00040	0.00024	1
Ethylbenzene	ND		mg/kg	0.00081	0.00011	1
p/m-Xylene	ND		mg/kg	0.0016	0.00045	1
o-Xylene	0.00084		mg/kg	0.00081	0.00023	1
Xylenes, Total	0.00084		mg/kg	0.00081	0.00023	1
Isopropylbenzene	0.00015	J	mg/kg	0.00081	0.00008	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0016	0.00016	1
1,2,4-Trimethylbenzene	0.0024		mg/kg	0.0016	0.00027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:59
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00075	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00081	1
1,2-Dibromoethane	ND		mg/kg	0.00075	0.00044	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00084	1
o-Xylene	ND		mg/kg	0.0015	0.00044	1
Xylenes, Total	ND		mg/kg	0.0015	0.00044	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.00067	J	mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 22:26
Analyst: JIC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00044	1
Benzene	ND		mg/kg	0.0011	0.00036	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00056	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00064	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00064	1
Xylenes, Total	ND		mg/kg	0.0022	0.00064	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00042	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0044	0.00073	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 22:53
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00037	J	mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00038	1
Ethylbenzene	0.00021	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0012	J	mg/kg	0.0026	0.00072	1
o-Xylene	0.00064	J	mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0018	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00045	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0012	J	mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	75		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 23:20
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	0.00036	J	mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00059	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	0.00016	J	mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0022	0.00061	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	ND		mg/kg	0.0011	0.00032	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.00038	J	mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 23:47
Analyst: JIC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00028	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.00053	J	mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 00:14
Analyst: JIC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00064	1
o-Xylene	0.00045	J	mg/kg	0.0011	0.00033	1
Xylenes, Total	0.00045	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.0013		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00027	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 00:40
Analyst: JIC
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 01:07
Analyst: JIC
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.00090	J	mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:09
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00039	1
Benzene	ND		mg/kg	0.00098	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00050	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.00098	0.00057	1
Ethylbenzene	0.00029	J	mg/kg	0.0020	0.00028	1
p/m-Xylene	0.0017	J	mg/kg	0.0039	0.0011	1
o-Xylene	0.0038		mg/kg	0.0020	0.00057	1
Xylenes, Total	0.0055	J	mg/kg	0.0020	0.00057	1
Isopropylbenzene	0.0017	J	mg/kg	0.0020	0.00021	1
1,3,5-Trimethylbenzene	0.0014	J	mg/kg	0.0039	0.00038	1
1,2,4-Trimethylbenzene	0.0057		mg/kg	0.0039	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**285**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 04:41
Analyst: JIC
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.30	0.031	1
Benzene	0.094		mg/kg	0.076	0.025	1
1,2-Dichloroethane	ND		mg/kg	0.15	0.039	1
Toluene	0.44		mg/kg	0.15	0.083	1
1,2-Dibromoethane	ND		mg/kg	0.076	0.045	1
Ethylbenzene	0.11	J	mg/kg	0.15	0.021	1
p/m-Xylene	0.30		mg/kg	0.30	0.085	1
o-Xylene	0.12	J	mg/kg	0.15	0.044	1
Xylenes, Total	0.42	J	mg/kg	0.15	0.044	1
Isopropylbenzene	0.072	J	mg/kg	0.15	0.017	1
1,3,5-Trimethylbenzene	0.11	J	mg/kg	0.30	0.029	1
1,2,4-Trimethylbenzene	0.22	J	mg/kg	0.30	0.051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:03
Analyst: NLK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00085	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00085	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00095	1
o-Xylene	ND		mg/kg	0.0017	0.00049	1
Xylenes, Total	ND		mg/kg	0.0017	0.00049	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.00033	J	mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.00087	J	mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**133**	Q	70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	**135**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 01:33
Analyst: JIC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00028	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 02:00
Analyst: JIC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00032	1
Benzene	ND		mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00085	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00088	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 02:27
Analyst: JIC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00068	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00035	1
Toluene	ND		mg/kg	0.0014	0.00074	1
1,2-Dibromoethane	ND		mg/kg	0.00068	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00076	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 05:08
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.12	0.012	1
Benzene	0.023	J	mg/kg	0.029	0.0097	1
1,2-Dichloroethane	ND		mg/kg	0.058	0.015	1
Toluene	ND		mg/kg	0.058	0.032	1
1,2-Dibromoethane	ND		mg/kg	0.029	0.017	1
Ethylbenzene	0.087		mg/kg	0.058	0.0082	1
p/m-Xylene	0.20		mg/kg	0.12	0.033	1
o-Xylene	0.096		mg/kg	0.058	0.017	1
Xylenes, Total	0.30		mg/kg	0.058	0.017	1
Isopropylbenzene	0.081		mg/kg	0.058	0.0064	1
1,3,5-Trimethylbenzene	0.54		mg/kg	0.12	0.011	1
1,2,4-Trimethylbenzene	0.75		mg/kg	0.12	0.019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:36
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	0.0043		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	0.0023		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.010		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.025		mg/kg	0.0029	0.00082	1
o-Xylene	0.013		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.038		mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.015		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	0.11		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.13		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**194**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/10/22 16:58
Analyst: JIC
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.00073	J	mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	0.00098	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.00097	J	mg/kg	0.0026	0.00073	1
o-Xylene	0.0013		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0023	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0058		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0016	J	mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	**131**	Q	70-130
4-Bromofluorobenzene	**293**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17 R
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:42
Analyst: NLK
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00077	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	ND		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	0.00047	J	mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00086	1
o-Xylene	0.0011	J	mg/kg	0.0015	0.00045	1
Xylenes, Total	0.0011	J	mg/kg	0.0015	0.00045	1
Isopropylbenzene	0.0026		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	0.00054	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.00084	J	mg/kg	0.0031	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**196**	Q	70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:52
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 13:26
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0013	J	mg/kg	0.0026	0.00074	1
o-Xylene	0.0011	J	mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0024	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0013		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 13:52
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00059	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	0.0011	J	mg/kg	0.0022	0.00061	1
o-Xylene	0.00086	J	mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0020	J	mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.00096	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.00059	J	mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 14:18
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.00099	J	mg/kg	0.0029	0.00081	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.00099	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 14:44
Analyst: JIC
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0011	J	mg/kg	0.0033	0.00091	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	0.0011	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 15:11
Analyst: JIC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	0.00076	J	mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	0.00076	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:57
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.00020	J	mg/kg	0.00053	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00027	1
Toluene	ND		mg/kg	0.0010	0.00057	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0010	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00059	1
o-Xylene	ND		mg/kg	0.0010	0.00031	1
Xylenes, Total	ND		mg/kg	0.0010	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 16:03
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0046	0.00047	1
Benzene	ND		mg/kg	0.0012	0.00039	1
1,2-Dichloroethane	ND		mg/kg	0.0023	0.00060	1
Toluene	ND		mg/kg	0.0023	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00068	1
Ethylbenzene	ND		mg/kg	0.0023	0.00033	1
p/m-Xylene	ND		mg/kg	0.0046	0.0013	1
o-Xylene	ND		mg/kg	0.0023	0.00068	1
Xylenes, Total	ND		mg/kg	0.0023	0.00068	1
Isopropylbenzene	ND		mg/kg	0.0023	0.00025	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0046	0.00045	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0046	0.00078	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-26
Client ID: TB-221206
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 00:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:15
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-26
Client ID: TB-221206
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 00:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/07/22 19:35
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/07/22 19:15
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 26 Batch: WG1720722-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268455

Project Number: 200.00135.006 **Report Date:** 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:06
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-10,13-15 Batch: WG1721432-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:06
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12,16 Batch: WG1721434-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 26 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:01
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 19-23,25 Batch: WG1722187-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/10/22 11:26
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 17 Batch: WG1722219-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 11-12,16-18,24 Batch: WG1722625-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	111		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 26 Batch: WG1720722-3 WG1720722-4								
Methyl tert butyl ether	92		92		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	103		104		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	99		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10,13-15 Batch: WG1721432-3 WG1721432-4								
Methyl tert butyl ether	85		87		66-130	2		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	84		86		70-130	2		30
Toluene	96		96		70-130	0		30
1,2-Dibromoethane	90		92		70-130	2		30
Ethylbenzene	95		95		70-130	0		30
p/m-Xylene	97		97		70-130	0		30
o-Xylene	94		93		70-130	1		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	95		94		70-130	1		30
1,2,4-Trimethylbenzene	93		92		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		96		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	96		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12,16 Batch: WG1721434-3 WG1721434-4								
Methyl tert butyl ether	85		87		66-130	2		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	84		86		70-130	2		30
Toluene	96		96		70-130	0		30
1,2-Dibromoethane	90		92		70-130	2		30
Ethylbenzene	95		95		70-130	0		30
p/m-Xylene	97		97		70-130	0		30
o-Xylene	94		93		70-130	1		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	95		94		70-130	1		30
1,2,4-Trimethylbenzene	93		92		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		96		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	96		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 26		Batch: WG1721462-2						
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 19-23,25 Batch: WG1722187-3 WG1722187-4								
Methyl tert butyl ether	101		104		66-130	3		30
Benzene	103		101		70-130	2		30
1,2-Dichloroethane	94		94		70-130	0		30
Toluene	101		100		70-130	1		30
1,2-Dibromoethane	99		102		70-130	3		30
Ethylbenzene	108		107		70-130	1		30
p/m-Xylene	98		97		70-130	1		30
o-Xylene	95		95		70-130	0		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	105		103		70-130	2		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	105		104		70-130
Dibromofluoromethane	94		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 17 Batch: WG1722219-3 WG1722219-4								
Methyl tert butyl ether	92		89		66-130	3		30
Benzene	106		103		70-130	3		30
1,2-Dichloroethane	95		96		70-130	1		30
Toluene	103		98		70-130	5		30
1,2-Dibromoethane	102		104		70-130	2		30
Ethylbenzene	105		98		70-130	7		30
p/m-Xylene	106		98		70-130	8		30
o-Xylene	105		98		70-130	7		30
Isopropylbenzene	101		94		70-130	7		30
1,3,5-Trimethylbenzene	101		96		70-130	5		30
1,2,4-Trimethylbenzene	100		96		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		91		70-130
Toluene-d8	99		101		70-130
4-Bromofluorobenzene	92		89		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 11-12,16-18,24 Batch: WG1722625-3 WG1722625-4								
Methyl tert butyl ether	88		90		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	92		92		70-130	0		30
Toluene	91		92		70-130	1		30
1,2-Dibromoethane	97		97		70-130	0		30
Ethylbenzene	92		92		70-130	0		30
p/m-Xylene	98		98		70-130	0		30
o-Xylene	96		95		70-130	1		30
Isopropylbenzene	96		95		70-130	1		30
1,3,5-Trimethylbenzene	95		96		70-130	1		30
1,2,4-Trimethylbenzene	96		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		93		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	105		105		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 26 QC Batch ID: WG1721462-3 QC Sample: L2268455-26 Client ID: TB-221206													
1,2-Dibromoethane	ND	0.252	0.250	99		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 20:37
Analyst: JG
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.5		mg/kg	0.24	0.029	1
Fluorene	0.20	J	mg/kg	0.24	0.024	1
Phenanthrene	0.71		mg/kg	0.14	0.029	1
Anthracene	0.23		mg/kg	0.14	0.047	1
Pyrene	0.32		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.24		mg/kg	0.14	0.027	1
Chrysene	0.26		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.34		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.30		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.19		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:01
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.032	J	mg/kg	0.19	0.023	1
Fluorene	0.14	J	mg/kg	0.19	0.018	1
Phenanthrene	0.33		mg/kg	0.11	0.023	1
Anthracene	0.061	J	mg/kg	0.11	0.037	1
Pyrene	0.38		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.19		mg/kg	0.11	0.021	1
Chrysene	0.55		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.12		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.061	J	mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.044	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:25
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.4		mg/kg	0.24	0.029	1
Fluorene	0.21	J	mg/kg	0.24	0.023	1
Phenanthrene	0.70		mg/kg	0.14	0.029	1
Anthracene	0.24		mg/kg	0.14	0.046	1
Pyrene	0.55		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.42		mg/kg	0.14	0.026	1
Chrysene	0.47		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.58		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.51		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.32		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:49
Analyst: JG
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.9		mg/kg	0.25	0.031	1
Fluorene	0.52		mg/kg	0.25	0.025	1
Phenanthrene	2.4		mg/kg	0.15	0.031	1
Anthracene	0.79		mg/kg	0.15	0.049	1
Pyrene	2.8		mg/kg	0.15	0.025	1
Benzo(a)anthracene	1.9		mg/kg	0.15	0.028	1
Chrysene	1.9		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	2.0		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.9		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	1.0		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 22:13
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.068	J	mg/kg	0.18	0.023	1
Fluorene	0.051	J	mg/kg	0.18	0.018	1
Phenanthrene	0.16		mg/kg	0.11	0.023	1
Anthracene	0.042	J	mg/kg	0.11	0.036	1
Pyrene	0.32		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.11		mg/kg	0.11	0.021	1
Chrysene	0.36		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.17		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.10	J	mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.086	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06 D
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:42
Analyst: MG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.93	0.11	5
Fluorene	0.092	J	mg/kg	0.93	0.090	5
Phenanthrene	0.30	J	mg/kg	0.56	0.11	5
Anthracene	ND		mg/kg	0.56	0.18	5
Pyrene	0.54	J	mg/kg	0.56	0.092	5
Benzo(a)anthracene	0.26	J	mg/kg	0.56	0.10	5
Chrysene	0.64		mg/kg	0.56	0.097	5
Benzo(b)fluoranthene	0.19	J	mg/kg	0.56	0.16	5
Benzo(a)pyrene	ND		mg/kg	0.74	0.23	5
Benzo(ghi)perylene	0.11	J	mg/kg	0.74	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:44
Analyst: JG
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.4		mg/kg	0.21	0.026	1
Fluorene	0.69		mg/kg	0.21	0.020	1
Phenanthrene	4.3		mg/kg	0.12	0.026	1
Anthracene	1.3		mg/kg	0.12	0.041	1
Pyrene	3.8		mg/kg	0.12	0.021	1
Benzo(a)anthracene	2.2		mg/kg	0.12	0.024	1
Chrysene	1.8		mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	2.2		mg/kg	0.12	0.035	1
Benzo(a)pyrene	1.8		mg/kg	0.17	0.051	1
Benzo(ghi)perylene	1.0		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:56
Analyst: JG
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.20	0.025	1
Fluorene	0.19	J	mg/kg	0.20	0.020	1
Phenanthrene	0.82		mg/kg	0.12	0.025	1
Anthracene	0.34		mg/kg	0.12	0.040	1
Pyrene	0.44		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.30		mg/kg	0.12	0.023	1
Chrysene	0.47		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.38		mg/kg	0.12	0.034	1
Benzo(a)pyrene	0.44		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	0.50		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:20
Analyst: JG
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.86		mg/kg	0.28	0.034	1
Fluorene	0.37		mg/kg	0.28	0.027	1
Phenanthrene	2.8		mg/kg	0.16	0.034	1
Anthracene	0.99		mg/kg	0.16	0.054	1
Pyrene	3.0		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.1		mg/kg	0.16	0.031	1
Chrysene	1.8		mg/kg	0.16	0.029	1
Benzo(b)fluoranthene	1.6		mg/kg	0.16	0.046	1
Benzo(a)pyrene	1.5		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	0.88		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 04:12
Analyst: MG
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.2		mg/kg	0.26	0.031	1
Fluorene	0.38		mg/kg	0.26	0.025	1
Phenanthrene	1.7		mg/kg	0.15	0.031	1
Anthracene	0.52		mg/kg	0.15	0.050	1
Pyrene	1.6		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.96		mg/kg	0.15	0.029	1
Chrysene	1.0		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.3		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.2		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.71		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 14:32
Analyst: JG
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.7		mg/kg	0.27	0.033	1
Fluorene	1.5		mg/kg	0.27	0.027	1
Phenanthrene	4.5		mg/kg	0.16	0.033	1
Anthracene	1.5		mg/kg	0.16	0.054	1
Pyrene	4.4		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.0		mg/kg	0.16	0.031	1
Chrysene	2.2		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	2.2		mg/kg	0.16	0.046	1
Benzo(a)pyrene	2.0		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.3		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12 D
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 14:56
Analyst: JG
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.3		mg/kg	2.6	0.32	10
Fluorene	8.2		mg/kg	2.6	0.25	10
Phenanthrene	28.		mg/kg	1.6	0.32	10
Anthracene	9.6		mg/kg	1.6	0.51	10
Pyrene	26.		mg/kg	1.6	0.26	10
Benzo(a)anthracene	13.		mg/kg	1.6	0.29	10
Chrysene	12.		mg/kg	1.6	0.27	10
Benzo(b)fluoranthene	14.		mg/kg	1.6	0.44	10
Benzo(a)pyrene	12.		mg/kg	2.1	0.63	10
Benzo(ghi)perylene	5.9		mg/kg	2.1	0.30	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	41		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 15:20
Analyst: JG
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	9.6		mg/kg	0.58	0.070	1
Fluorene	0.67		mg/kg	0.58	0.056	1
Phenanthrene	2.4		mg/kg	0.35	0.070	1
Anthracene	0.85		mg/kg	0.35	0.11	1
Pyrene	0.81		mg/kg	0.35	0.058	1
Benzo(a)anthracene	0.50		mg/kg	0.35	0.065	1
Chrysene	0.53		mg/kg	0.35	0.060	1
Benzo(b)fluoranthene	0.58		mg/kg	0.35	0.098	1
Benzo(a)pyrene	0.52		mg/kg	0.46	0.14	1
Benzo(ghi)perylene	0.59		mg/kg	0.46	0.068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 15:44
Analyst: JG
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.2		mg/kg	0.22	0.027	1
Fluorene	0.35		mg/kg	0.22	0.021	1
Phenanthrene	1.0		mg/kg	0.13	0.027	1
Anthracene	0.39		mg/kg	0.13	0.043	1
Pyrene	1.9		mg/kg	0.13	0.022	1
Benzo(a)anthracene	1.5		mg/kg	0.13	0.025	1
Chrysene	1.3		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	1.6		mg/kg	0.13	0.037	1
Benzo(a)pyrene	1.4		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	0.64		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:08
Analyst: JG
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.9		mg/kg	0.23	0.028	1
Fluorene	0.45		mg/kg	0.23	0.022	1
Phenanthrene	1.4		mg/kg	0.14	0.028	1
Anthracene	0.58		mg/kg	0.14	0.045	1
Pyrene	2.0		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.8		mg/kg	0.14	0.026	1
Chrysene	1.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.2		mg/kg	0.14	0.038	1
Benzo(a)pyrene	2.0		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.2		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:32
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.65		mg/kg	0.18	0.023	1
Fluorene	0.35		mg/kg	0.18	0.018	1
Phenanthrene	1.0		mg/kg	0.11	0.022	1
Anthracene	0.18		mg/kg	0.11	0.036	1
Pyrene	0.91		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.41		mg/kg	0.11	0.021	1
Chrysene	1.1		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.45		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.32		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.25		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17 D
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:56
Analyst: JG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.93	J	mg/kg	1.1	0.13	5
Fluorene	ND		mg/kg	1.1	0.11	5
Phenanthrene	0.62	J	mg/kg	0.66	0.13	5
Anthracene	ND		mg/kg	0.66	0.21	5
Pyrene	0.42	J	mg/kg	0.66	0.11	5
Benzo(a)anthracene	0.37	J	mg/kg	0.66	0.12	5
Chrysene	0.56	J	mg/kg	0.66	0.11	5
Benzo(b)fluoranthene	0.38	J	mg/kg	0.66	0.18	5
Benzo(a)pyrene	0.29	J	mg/kg	0.88	0.27	5
Benzo(ghi)perylene	0.36	J	mg/kg	0.88	0.13	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:21
Analyst: JG
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.92		mg/kg	0.20	0.024	1
Fluorene	0.25		mg/kg	0.20	0.019	1
Phenanthrene	0.47		mg/kg	0.12	0.024	1
Anthracene	0.25		mg/kg	0.12	0.038	1
Pyrene	1.2		mg/kg	0.12	0.020	1
Benzo(a)anthracene	1.2		mg/kg	0.12	0.022	1
Chrysene	1.0		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	1.2		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.1		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.48		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	117		23-120
2-Fluorobiphenyl	97		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:45
Analyst: JG
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.2		mg/kg	0.23	0.028	1
Fluorene	0.69		mg/kg	0.23	0.022	1
Phenanthrene	2.3		mg/kg	0.14	0.028	1
Anthracene	0.78		mg/kg	0.14	0.044	1
Pyrene	3.2		mg/kg	0.14	0.022	1
Benzo(a)anthracene	2.8		mg/kg	0.14	0.025	1
Chrysene	2.5		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	3.5		mg/kg	0.14	0.038	1
Benzo(a)pyrene	3.0		mg/kg	0.18	0.055	1
Benzo(ghi)perylene	1.4		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:09
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.2		mg/kg	0.20	0.025	1
Fluorene	0.45		mg/kg	0.20	0.020	1
Phenanthrene	2.3		mg/kg	0.12	0.025	1
Anthracene	0.72		mg/kg	0.12	0.040	1
Pyrene	3.3		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.8		mg/kg	0.12	0.023	1
Chrysene	2.4		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	3.1		mg/kg	0.12	0.034	1
Benzo(a)pyrene	2.8		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	1.3		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:33
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.3		mg/kg	0.24	0.029	1
Fluorene	0.26		mg/kg	0.24	0.023	1
Phenanthrene	1.7		mg/kg	0.14	0.029	1
Anthracene	0.66		mg/kg	0.14	0.047	1
Pyrene	3.8		mg/kg	0.14	0.024	1
Benzo(a)anthracene	3.4		mg/kg	0.14	0.027	1
Chrysene	3.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.8		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.2		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	1.6		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22 D
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 17:49
Analyst: MG
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.7		mg/kg	1.4	0.18	5
Fluorene	0.98	J	mg/kg	1.4	0.14	5
Phenanthrene	4.7		mg/kg	0.87	0.18	5
Anthracene	2.7		mg/kg	0.87	0.28	5
Pyrene	23.		mg/kg	0.87	0.14	5
Benzo(a)anthracene	20.		mg/kg	0.87	0.16	5
Chrysene	17.		mg/kg	0.87	0.15	5
Benzo(b)fluoranthene	19.		mg/kg	0.87	0.24	5
Benzo(a)pyrene	17.		mg/kg	1.2	0.35	5
Benzo(ghi)perylene	6.6		mg/kg	1.2	0.17	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	89		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 19:21
Analyst: JG
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.19	0.023	1
Fluorene	0.65		mg/kg	0.19	0.018	1
Phenanthrene	2.7		mg/kg	0.11	0.023	1
Anthracene	0.57		mg/kg	0.11	0.037	1
Pyrene	3.3		mg/kg	0.11	0.019	1
Benzo(a)anthracene	2.5		mg/kg	0.11	0.021	1
Chrysene	2.4		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	2.7		mg/kg	0.11	0.032	1
Benzo(a)pyrene	2.3		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	1.2		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 19:45
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.049	J	mg/kg	0.19	0.023	1
Fluorene	0.038	J	mg/kg	0.19	0.018	1
Phenanthrene	2.0		mg/kg	0.11	0.023	1
Anthracene	0.52		mg/kg	0.11	0.037	1
Pyrene	3.3		mg/kg	0.11	0.019	1
Benzo(a)anthracene	2.4		mg/kg	0.11	0.021	1
Chrysene	2.4		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	2.7		mg/kg	0.11	0.032	1
Benzo(a)pyrene	2.0		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	1.1		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	86		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 20:09
Analyst: JG
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.1		mg/kg	0.23	0.028	1
Fluorene	0.56		mg/kg	0.23	0.023	1
Phenanthrene	1.5		mg/kg	0.14	0.028	1
Anthracene	0.64		mg/kg	0.14	0.045	1
Pyrene	3.2		mg/kg	0.14	0.023	1
Benzo(a)anthracene	2.9		mg/kg	0.14	0.026	1
Chrysene	2.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	3.6		mg/kg	0.14	0.039	1
Benzo(a)pyrene	3.3		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	1.5		mg/kg	0.19	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/08/22 00:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/07/22 05:11

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-10 Batch: WG1720179-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	77		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/08/22 10:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 11-25 Batch: WG1720590-1					
Naphthalene	ND		mg/kg	0.17	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	91		30-120
4-Terphenyl-d14	91		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-10 Batch: WG1720179-2 WG1720179-3								
Naphthalene	61		58		40-140	5		50
Fluorene	56		56		40-140	0		50
Phenanthrene	59		58		40-140	2		50
Anthracene	62		60		40-140	3		50
Pyrene	60		57		35-142	5		50
Benzo(a)anthracene	57		58		40-140	2		50
Chrysene	54		54		40-140	0		50
Benzo(b)fluoranthene	55		56		40-140	2		50
Benzo(a)pyrene	57		60		40-140	5		50
Benzo(ghi)perylene	60		59		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		58		25-120
Phenol-d6	63		59		10-120
Nitrobenzene-d5	54		53		23-120
2-Fluorobiphenyl	66		64		30-120
2,4,6-Tribromophenol	69		70		10-136
4-Terphenyl-d14	58		61		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 11-25 Batch: WG1720590-2 WG1720590-3								
Naphthalene	79		77		40-140	3		50
Fluorene	83		80		40-140	4		50
Phenanthrene	77		74		40-140	4		50
Anthracene	80		77		40-140	4		50
Pyrene	83		84		35-142	1		50
Benzo(a)anthracene	84		80		40-140	5		50
Chrysene	81		78		40-140	4		50
Benzo(b)fluoranthene	91		89		40-140	2		50
Benzo(a)pyrene	89		88		40-140	1		50
Benzo(ghi)perylene	84		80		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	110		108		23-120
2-Fluorobiphenyl	91		86		30-120
4-Terphenyl-d14	83		84		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	284		mg/kg	2.80	0.150	1	12/07/22 20:26	12/08/22 11:07	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	33.7		mg/kg	2.22	0.119	1	12/07/22 20:26	12/08/22 10:52	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	206		mg/kg	2.79	0.150	1	12/07/22 20:26	12/08/22 10:57	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	363		mg/kg	2.98	0.160	1	12/07/22 20:26	12/08/22 11:02	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.4		mg/kg	2.24	0.120	1	12/07/22 20:26	12/08/22 11:40	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	162		mg/kg	11.2	0.598	5	12/07/22 20:26	12/12/22 11:39	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1520		mg/kg	2.42	0.130	1	12/07/22 20:26	12/08/22 11:51	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	184		mg/kg	2.44	0.131	1	12/07/22 20:26	12/08/22 11:56	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	412		mg/kg	3.28	0.176	1	12/07/22 20:26	12/08/22 12:01	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	493		mg/kg	3.06	0.164	1	12/07/22 20:26	12/08/22 12:06	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	343		mg/kg	3.21	0.172	1	12/07/22 20:26	12/08/22 12:10	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	411		mg/kg	3.09	0.166	1	12/07/22 20:26	12/08/22 13:49	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	295		mg/kg	2.46	0.132	1	12/07/22 20:26	12/08/22 13:55	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	112		mg/kg	2.64	0.142	1	12/07/22 20:26	12/08/22 13:59	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	63.3		mg/kg	2.62	0.140	1	12/07/22 20:26	12/08/22 13:14	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	125		mg/kg	2.26	0.121	1	12/07/22 20:26	12/08/22 13:19	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	186		mg/kg	2.59	0.139	1	12/07/22 20:26	12/08/22 13:24	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	92.5		mg/kg	2.29	0.123	1	12/07/22 20:26	12/08/22 13:29	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	89.5		mg/kg	2.71	0.145	1	12/07/22 20:26	12/08/22 13:34	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	95.3		mg/kg	2.33	0.125	1	12/07/22 20:26	12/08/22 13:39	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	59.1		mg/kg	2.80	0.150	1	12/08/22 06:10	12/08/22 13:46	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.6		mg/kg	3.38	0.181	1	12/08/22 06:10	12/08/22 14:41	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	30.1		mg/kg	2.16	0.116	1	12/08/22 06:10	12/08/22 14:46	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5090		mg/kg	2.22	0.119	1	12/08/22 06:10	12/08/22 14:50	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	69.8		mg/kg	2.72	0.146	1	12/08/22 06:10	12/08/22 14:55	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1720509-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/07/22 20:26	12/08/22 10:43	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-25 Batch: WG1720681-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/08/22 06:10	12/08/22 13:24	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1720509-2 SRM Lot Number: D116-540								
Lead, Total	100		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 21-25 Batch: WG1720681-2 SRM Lot Number: D116-540								
Lead, Total	95		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1720509-3 QC Sample: L2268455-01 Client ID: GPR281-01-SS01												
Lead, Total	284	60.8	292	**13**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-25 QC Batch ID: WG1720681-3 QC Sample: L2268455-21 Client ID: GPR284-11-SS01												
Lead, Total	59.1	59.7	118	99		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1720509-4 QC Sample: L2268455-01 Client ID: GPR281-01-SS01						
Lead, Total	284	281	mg/kg	1		20
Total Metals - Mansfield Lab Associated sample(s): 21-25 QC Batch ID: WG1720681-4 QC Sample: L2268455-21 Client ID: GPR284-11-SS01						
Lead, Total	59.1	66.2	mg/kg	11		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.3		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.6		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.5		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.3		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.1		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.9		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.2		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.5		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.4		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.5		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-13 QC Batch ID: WG1720705-1 QC Sample: L2268455-01 Client ID: GPR281-01-SS01						
Solids, Total	68.3	64.8	%	5		20
General Chemistry - Westborough Lab Associated sample(s): 14-25 QC Batch ID: WG1720706-1 QC Sample: L2268455-14 Client ID: GPR284-01-SS01						
Solids, Total	74.9	75.0	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-01A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-01B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-01C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-01D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-01F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-02A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-02B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-02C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-02D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-02F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-03A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-03B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-03C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-03D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-03F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-04A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-04B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-04C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-04D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-04F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-05A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-05B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-05C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-05D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-05F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-06A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-06B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-06C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-06D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-06F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-07A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-07B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-07C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-07D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-07F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-08A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-08B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-08C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-08D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-08F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-09A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-09B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-09C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-09D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-09F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-10A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-10B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-10C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-10D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-10F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-11A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-11B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-11C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-11D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-11F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-12A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268455-12B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-12C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-12D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-12F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-13A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-13B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-13C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-13D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-13F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-14A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-14B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-14C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-14D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-14F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-15A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-15B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-15C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-15D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-15F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-16A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268455-16B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-16C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-16D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-16F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-17A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-17B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-17C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-17D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-17F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-18A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-18B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-18C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-18D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-18E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-18F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-19A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-19B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-19C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-19D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-19F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-20A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-20B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-20C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-20D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-20E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-20F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-21A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-21B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-21C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-21D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-21E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-21F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-22A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-22B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-22C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-22D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-22E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-22F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-23A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-23B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-23C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-23D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-23E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-23F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-24A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-24B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-24C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-24D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-24E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-24F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-25A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-25B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-25C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-25D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-25E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-25F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-26A	Vial Na2S2O3 preserved	B	NA		3.5	Y	Absent		8011(14)
L2268455-26B	Vial Na2S2O3 preserved	B	NA		3.5	Y	Absent		8011(14)
L2268455-26C	Vial HCl preserved	B	NA		3.5	Y	Absent		PA-8260(14)
L2268455-26D	Vial HCl preserved	B	NA		3.5	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL — Work with Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~12169~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -01	GPR291-01-5501	12/06	0930	S	TS	☑	☑	☑		4
-02	GPR281-07-5501		0945			☑	☑	☑		2
-03	GPR281-08-5501		0955			☑	☑	☑		4
-04	GPR281-10-5501		1005			☑	☑	☑		2
-05	GPR281-11-5501		1020			☑	☑	☑		4
-06	GPR281-12-5501		1030			☑	☑	☑		2
-07	GPR282-01-5501		1130			☐	☐	☐		4
-08	GPR282-03-5501		1140			☐	☑	☑		2
-09	GPR282-05-5501		1150			☑	☑	☑		4
-10	GPR 282-07-5501		1200			☐	☐	☐		2
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6/22 1545	D Robinson AAL	12/6/22 1545
D Robinson AAL	12/6/22 1800		12.6.22 1800
	12.6.22 2100		12.6.22 2100

12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(M-NJ)

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@lerraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -11	GPR282-08-5501	12/6	1210	S	TS	☐	☒	☒		4
-12	GPR 282-10-5501		1220			☐	☒	☒		2
-13	GPR 282-12-5501		1230			☐	☒	☒		4
-14	GPR 284-01-5501		1330			☐	☒	☒		2
-15	GPR 284-03-5501		1345			☐	☒	☒		4
-16	GPR 284-05-5501		1400			☐	☒	☒		2
-17	GPR 284-07-5501		1410			☐	☒	☒		4
-18	GPR 284-08-5501		1420			☐	☒	☒		2
-19	GPR 284-09-5501		1430			☐	☒	☒		4
-20	GPR 284-10-5501	↓	1435	↓	↓	☐	☒	☒		2
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6 1505	D Dodgson AAL	12/6/22 1605
D.Dodgson AAL	12/6/22 2200		12/6 2300
			12/6 2321

12/7/22 0135
12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~1961~~ ~~7823~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -21	GPR284-11-5501	12/6	1440	S	TS	☑	☑	☑		4
-22	GPR284-13-5501		1450	S	TS	☑	☑	☑		2
-23	GPR284-14-5501		1455	S	TS	☑	☑	☑		4
-24	GPR284-15-5501		1560	S	TS	☑	☑	☑		2
-25	DUP-5Z		-	S	TS	☑	☑	☑		4
-26	TB-221206			W	TS	☑	☐	☐		2
						☐	☐	☐		4
						☐	☐	☐		2
						☐	☐	☐		4
						☐	☐	☐		2

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	
Preservative	F	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6/22 1505	D Ransom AAL	12/6/22 1505
D Ransom AAL	12/6/22 1800		12/6 1800
	12.6.22 2105		12.6.22 2105

12/7/22 0135 12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

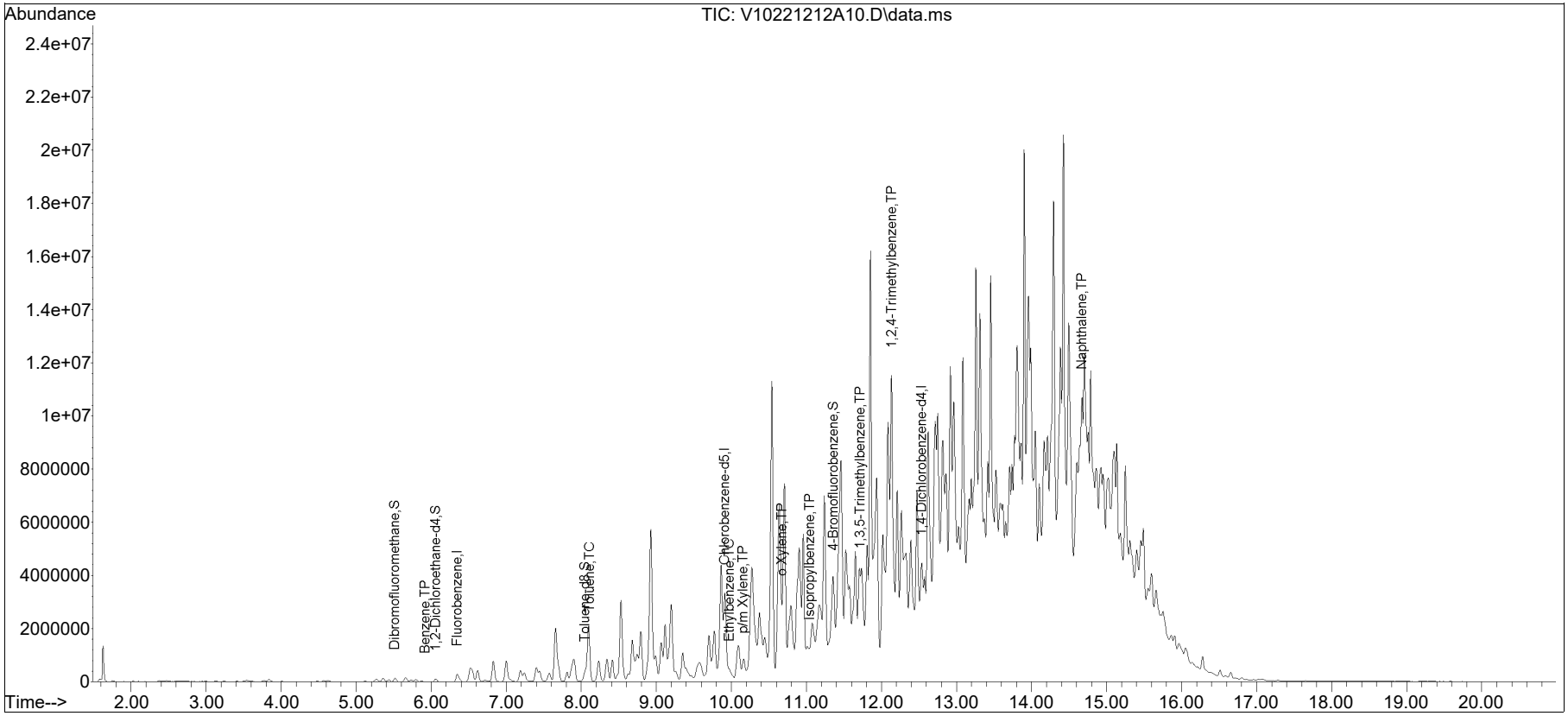
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221212A\
Data File : V10221212A10.D
Acq On : 12 Dec 2022 4:09 pm
Operator : VOA110:NLK
Sample : L2268455-11,31,4.26,5,,C,R2F
Misc : WG1722625,ICAL19281
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 13 08:48:23 2022
Quant Method : I:\VOLATILES\VOA110\2022\221212A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\\V10221212A01.D•

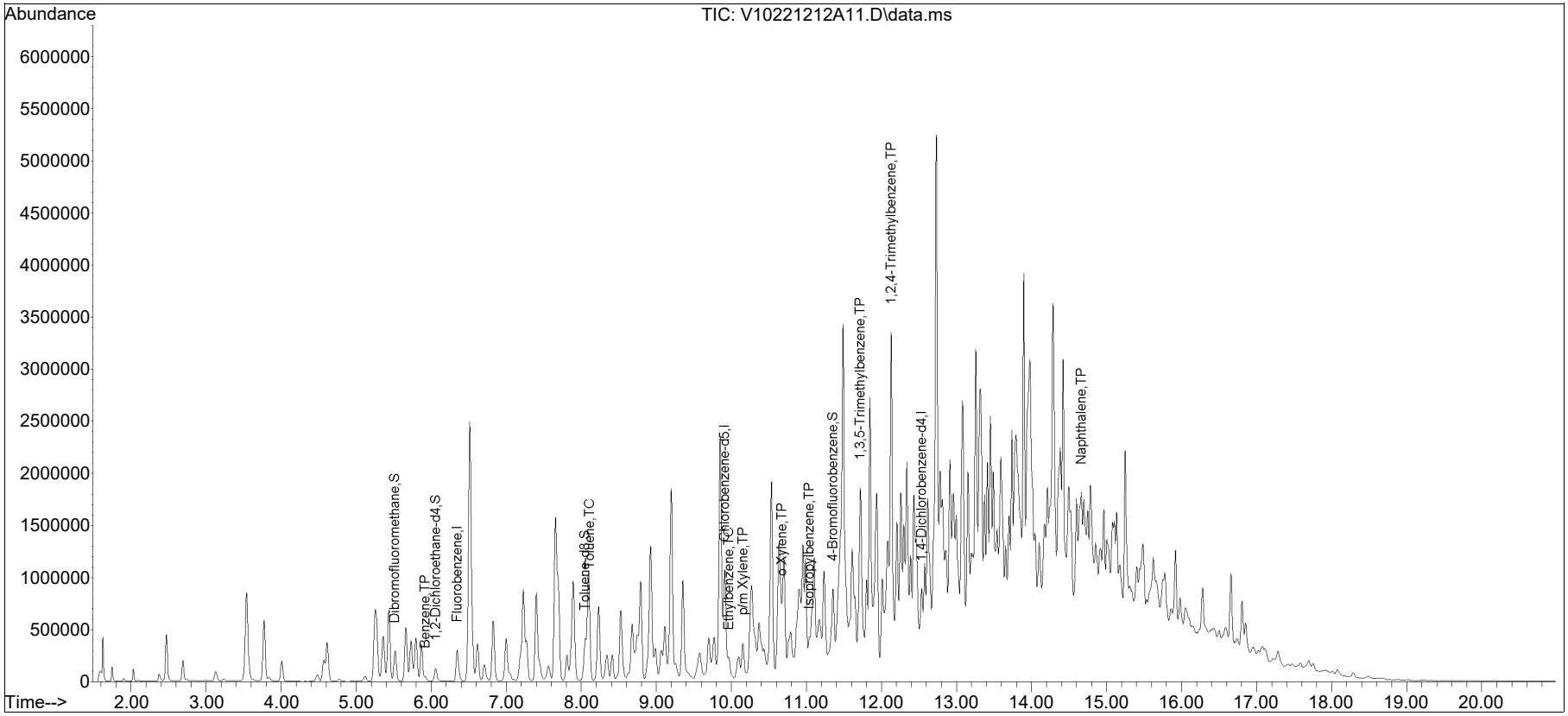


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221212A\
Data File : V10221212A11.D
Acq On : 12 Dec 2022 4:36 pm
Operator : VOA110:NLK
Sample : L2268455-16,31,3.95,5,,C,R2F
Misc : WG1722625,ICAL19281
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 13 08:48:45 2022
Quant Method : I:\VOLATILES\VOA110\2022\221212A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V10221212A01.D•



ANALYTICAL REPORT

Lab Number:	L2268803
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/14/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268803-01	GPR276-01-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:00	12/07/22
L2268803-02	GPR276-03-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:10	12/07/22
L2268803-03	GPR276-05-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:15	12/07/22
L2268803-04	GPR276-06-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:30	12/07/22
L2268803-05	GPR276-07-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:40	12/07/22
L2268803-06	GPR276-11-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:50	12/07/22
L2268803-07	GPR276-12-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:00	12/07/22
L2268803-08	GPR276-13-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:15	12/07/22
L2268803-09	GPR276-15-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:30	12/07/22
L2268803-10	GPR276-16-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:40	12/07/22
L2268803-11	GPR276-17-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:00	12/07/22
L2268803-12	GPR285-01-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:10	12/07/22
L2268803-13	GPR285-02-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:20	12/07/22
L2268803-14	GPR285-03-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:30	12/07/22
L2268803-15	GPR285-07-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:40	12/07/22
L2268803-16	GPR285-08-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:50	12/07/22
L2268803-17	GPR285-11-SS01	SOIL	PHILADELPHIA, PA	12/07/22 14:00	12/07/22
L2268803-18	GPR285-13-SS01	SOIL	PHILADELPHIA, PA	12/07/22 14:10	12/07/22
L2268803-19	DUP-53	SOIL	PHILADELPHIA, PA	12/07/22 00:00	12/07/22
L2268803-20	FB-221207-1	WATER	PHILADELPHIA, PA	12/07/22 12:00	12/07/22
L2268803-21	FB-221207-2	WATER	PHILADELPHIA, PA	12/07/22 14:10	12/07/22
L2268803-22	TB-221207	WATER	PHILADELPHIA, PA	12/07/22 00:00	12/07/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2268803-01: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2268803-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (139%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-02: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2268803-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (138%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-09 and -11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2268803-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (159%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-10: The surrogate recovery is outside the method acceptance criteria for and dibromofluoromethane (50%) due to interference with the Internal Standard.

L2268803-10: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (138%) and 4-bromofluorobenzene (1010%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

L2268803-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (152%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2268803-12: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (64%) due to interference with the Internal Standard.
L2268803-18D2: The surrogate recovery is outside the acceptance criteria for 1,2-dichloroethane-d4 (133%) due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2268803-18D2: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (60%) due to interference with the Internal Standard.
L2268803-18D2: The internal standard (IS) response for fluorobenzene (221%) was above the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was above method criteria, all associated compounds are considered to have a potentially low bias.

Microextractables
The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2268803-20 through -22, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM
The WG1721171-1 Method Blank, associated with L2268803-20 and -21, has a concentration above the reporting limit for Benzo(a)anthracene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals
L2268803-20: The Field Blank has a result for lead present above the reporting limit. The sample was verified

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/14/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:54
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.25	0.026	1
Benzene	0.040	J	mg/kg	0.064	0.021	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.033	1
Toluene	0.68		mg/kg	0.13	0.069	1
1,2-Dibromoethane	ND		mg/kg	0.064	0.037	1
Ethylbenzene	0.060	J	mg/kg	0.13	0.018	1
p/m-Xylene	0.11	J	mg/kg	0.25	0.071	1
o-Xylene	0.050	J	mg/kg	0.13	0.037	1
Xylenes, Total	0.16	J	mg/kg	0.13	0.037	1
Isopropylbenzene	0.10	J	mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.028	J	mg/kg	0.25	0.024	1
1,2,4-Trimethylbenzene	0.076	J	mg/kg	0.25	0.042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**139**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 21:53
Analyst: NLK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	0.96		mg/kg	0.056	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	1.4		mg/kg	0.11	0.061	1
1,2-Dibromoethane	ND		mg/kg	0.056	0.033	1
Ethylbenzene	0.51		mg/kg	0.11	0.016	1
p/m-Xylene	1.3		mg/kg	0.23	0.063	1
o-Xylene	0.47		mg/kg	0.11	0.033	1
Xylenes, Total	1.8		mg/kg	0.11	0.033	1
Isopropylbenzene	1.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.30		mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.77		mg/kg	0.23	0.038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 16:45
Analyst: AJK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	0.00040	J	mg/kg	0.00084	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	0.0010	J	mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00084	0.00050	1
Ethylbenzene	0.00026	J	mg/kg	0.0017	0.00024	1
p/m-Xylene	0.0011	J	mg/kg	0.0034	0.00095	1
o-Xylene	0.0016	J	mg/kg	0.0017	0.00049	1
Xylenes, Total	0.0027	J	mg/kg	0.0017	0.00049	1
Isopropylbenzene	0.031		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0021	J	mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.0019	J	mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**138**	Q	70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 10:40
Analyst: NLK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	ND		mg/kg	0.00095	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00049	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00095	0.00056	1
Ethylbenzene	ND		mg/kg	0.0019	0.00027	1
p/m-Xylene	ND		mg/kg	0.0038	0.0011	1
o-Xylene	ND		mg/kg	0.0019	0.00055	1
Xylenes, Total	ND		mg/kg	0.0019	0.00055	1
Isopropylbenzene	ND		mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0038	0.00037	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0038	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:03
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00060	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	0.00027	J	mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0039		mg/kg	0.0022	0.00062	1
o-Xylene	0.0013		mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0052		mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.00047	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.0067		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.0033		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:26
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00092	0.00024	1
Toluene	ND		mg/kg	0.00092	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00092	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00092	0.00027	1
Xylenes, Total	ND		mg/kg	0.00092	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00092	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:49
Analyst: NLK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	0.00062	J	mg/kg	0.0016	0.00048	1
Xylenes, Total	0.00062	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.00046	J	mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.00063	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0022	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**182**	Q	70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 22:15
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.28	0.028	1
Benzene	7.9		mg/kg	0.070	0.023	1
1,2-Dichloroethane	ND		mg/kg	0.14	0.036	1
Toluene	4.8		mg/kg	0.14	0.076	1
1,2-Dibromoethane	ND		mg/kg	0.070	0.041	1
Ethylbenzene	4.2		mg/kg	0.14	0.020	1
p/m-Xylene	11.		mg/kg	0.28	0.078	1
o-Xylene	0.72		mg/kg	0.14	0.040	1
Xylenes, Total	12.		mg/kg	0.14	0.040	1
Isopropylbenzene	1.4		mg/kg	0.14	0.015	1
1,3,5-Trimethylbenzene	0.90		mg/kg	0.28	0.027	1
1,2,4-Trimethylbenzene	2.8		mg/kg	0.28	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:35
Analyst: NLK
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00033	1
Benzene	ND		mg/kg	0.00081	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00081	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00091	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 22:38
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	0.083		mg/kg	0.028	0.0092	1
1,2-Dichloroethane	0.037	J	mg/kg	0.056	0.014	1
Toluene	0.27		mg/kg	0.056	0.030	1
1,2-Dibromoethane	ND		mg/kg	0.028	0.016	1
Ethylbenzene	0.087		mg/kg	0.056	0.0078	1
p/m-Xylene	0.36		mg/kg	0.11	0.031	1
o-Xylene	0.041	J	mg/kg	0.056	0.016	1
Xylenes, Total	0.40	J	mg/kg	0.056	0.016	1
Isopropylbenzene	0.26		mg/kg	0.056	0.0061	1
1,3,5-Trimethylbenzene	0.051	J	mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	0.066	J	mg/kg	0.11	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 23:24
Analyst: NLK
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.014		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	0.013		mg/kg	0.0018	0.00098	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	0.033		mg/kg	0.0036	0.0010	1
o-Xylene	0.011		mg/kg	0.0018	0.00052	1
Xylenes, Total	0.044		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.26		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.013		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	0.024		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	**138**	Q	70-130
4-Bromofluorobenzene	**1010**	Q	70-130
Dibromofluoromethane	**50**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 23:01
Analyst: NLK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.24	0.024	1
Benzene	0.17		mg/kg	0.059	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	1.0		mg/kg	0.12	0.064	1
1,2-Dibromoethane	ND		mg/kg	0.059	0.035	1
Ethylbenzene	0.32		mg/kg	0.12	0.017	1
p/m-Xylene	1.2		mg/kg	0.24	0.066	1
o-Xylene	0.37		mg/kg	0.12	0.034	1
Xylenes, Total	1.6		mg/kg	0.12	0.034	1
Isopropylbenzene	1.4		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.31		mg/kg	0.24	0.023	1
1,2,4-Trimethylbenzene	0.99		mg/kg	0.24	0.040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**152**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 03:15
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	4.0		mg/kg	0.054	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	12.		mg/kg	0.11	0.059	1
1,2-Dibromoethane	ND		mg/kg	0.054	0.032	1
Ethylbenzene	7.4		mg/kg	0.11	0.015	1
p/m-Xylene	21.		mg/kg	0.22	0.061	1
o-Xylene	6.4		mg/kg	0.11	0.032	1
Xylenes, Total	27.		mg/kg	0.11	0.032	1
Isopropylbenzene	4.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	30.		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	28.		mg/kg	0.22	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	**64**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:30
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	0.00026	J	mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	0.00036	J	mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0016	0.00045	1
Xylenes, Total	ND		mg/kg	0.0016	0.00045	1
Isopropylbenzene	0.00021	J	mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00077	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.00063	J	mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:52
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00068	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0012	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00070	1
o-Xylene	ND		mg/kg	0.0012	0.00036	1
Xylenes, Total	ND		mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D2
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 17:13
Analyst: AJK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.88	0.089	5
Benzene	12.		mg/kg	0.22	0.073	5
1,2-Dichloroethane	ND		mg/kg	0.44	0.11	5
Toluene	17.		mg/kg	0.44	0.24	5
1,2-Dibromoethane	ND		mg/kg	0.22	0.13	5
Ethylbenzene	51.		mg/kg	0.44	0.062	5
p/m-Xylene	88.		mg/kg	0.88	0.25	5
o-Xylene	6.5		mg/kg	0.44	0.13	5
Xylenes, Total	94.		mg/kg	0.44	0.13	5
Isopropylbenzene	18.		mg/kg	0.44	0.048	5
1,3,5-Trimethylbenzene	120		mg/kg	0.88	0.085	5
1,2,4-Trimethylbenzene	240	E	mg/kg	0.88	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	71		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:15
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	210		mg/kg	3.5	0.59	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	78		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:38
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:01
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00089	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D2
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 17:40
Analyst: AJK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.42	0.043	2
Benzene	1.1		mg/kg	0.11	0.035	2
1,2-Dichloroethane	ND		mg/kg	0.21	0.054	2
Toluene	6.9		mg/kg	0.21	0.12	2
1,2-Dibromoethane	ND		mg/kg	0.11	0.062	2
Ethylbenzene	23.		mg/kg	0.21	0.030	2
p/m-Xylene	34.		mg/kg	0.42	0.12	2
o-Xylene	5.0		mg/kg	0.21	0.062	2
Xylenes, Total	39.		mg/kg	0.21	0.062	2
Isopropylbenzene	12.		mg/kg	0.21	0.023	2
1,3,5-Trimethylbenzene	89.	E	mg/kg	0.42	0.041	2
1,2,4-Trimethylbenzene	94.	E	mg/kg	0.42	0.071	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**133**	Q	70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	**60**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:24
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3,5-Trimethylbenzene	80.		mg/kg	4.2	0.41	20
1,2,4-Trimethylbenzene	80.		mg/kg	4.2	0.71	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:47
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00086	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00097	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:26
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:30
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:37
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-22
Client ID: TB-221207
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:48
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-22
Client ID: TB-221207
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 10:10
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 20-22 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:21
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,07,09,11 Batch: WG1722648-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:21
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 10 Batch: WG1722651-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:31
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03-06,08,13-14,16-17,19 Batch: WG1722682-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:31
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01,15,18 Batch: WG1722683-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:10
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 20-22 Batch: WG1722693-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02 Batch: WG1722945-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15,18 Batch: WG1722950-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 18:48
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12 Batch: WG1723094-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 20-22		Batch: WG1721462-2						
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,07,09,11 Batch: WG1722648-3 WG1722648-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	89		88		70-130	1		30
1,2-Dichloroethane	88		87		70-130	1		30
Toluene	90		88		70-130	2		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		85		70-130	6		30
o-Xylene	88		83		70-130	6		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		91		70-130	5		30
1,2,4-Trimethylbenzene	93		89		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	108		108		70-130
4-Bromofluorobenzene	109		110		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 10 Batch: WG1722651-3 WG1722651-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	89		88		70-130	1		30
1,2-Dichloroethane	88		87		70-130	1		30
Toluene	90		88		70-130	2		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		85		70-130	6		30
o-Xylene	88		83		70-130	6		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		91		70-130	5		30
1,2,4-Trimethylbenzene	93		89		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	108		108		70-130
4-Bromofluorobenzene	109		110		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03-06,08,13-14,16-17,19 Batch: WG1722682-3 WG1722682-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	86		86		70-130	0		30
1,2-Dichloroethane	87		88		70-130	1		30
Toluene	92		88		70-130	4		30
1,2-Dibromoethane	89		87		70-130	2		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	87		86		70-130	1		30
Isopropylbenzene	98		90		70-130	9		30
1,3,5-Trimethylbenzene	98		92		70-130	6		30
1,2,4-Trimethylbenzene	96		89		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		102		70-130
Toluene-d8	111		107		70-130
4-Bromofluorobenzene	113		110		70-130
Dibromofluoromethane	98		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01,15,18 Batch: WG1722683-3 WG1722683-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	86		86		70-130	0		30
1,2-Dichloroethane	87		88		70-130	1		30
Toluene	92		88		70-130	4		30
1,2-Dibromoethane	89		87		70-130	2		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	87		86		70-130	1		30
Isopropylbenzene	98		90		70-130	9		30
1,3,5-Trimethylbenzene	98		92		70-130	6		30
1,2,4-Trimethylbenzene	96		89		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		102		70-130
Toluene-d8	111		107		70-130
4-Bromofluorobenzene	112		110		70-130
Dibromofluoromethane	98		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 20-22 Batch: WG1722693-3 WG1722693-4								
Methyl tert butyl ether	95		95		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		103		70-130
Toluene-d8	104		106		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	101		101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02 Batch: WG1722945-3 WG1722945-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15,18 Batch: WG1722950-3 WG1722950-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	93		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12 Batch: WG1723094-3 WG1723094-4								
Methyl tert butyl ether	99		100		66-130	1		30
Benzene	97		100		70-130	3		30
1,2-Dichloroethane	98		99		70-130	1		30
Toluene	89		92		70-130	3		30
1,2-Dibromoethane	93		95		70-130	2		30
Ethylbenzene	92		94		70-130	2		30
p/m-Xylene	91		93		70-130	2		30
o-Xylene	92		95		70-130	3		30
Isopropylbenzene	89		91		70-130	2		30
1,3,5-Trimethylbenzene	89		90		70-130	1		30
1,2,4-Trimethylbenzene	87		90		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	99		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:10
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	12.	E	mg/kg	0.28	0.033	1
Fluorene	3.0		mg/kg	0.28	0.027	1
Phenanthrene	5.5		mg/kg	0.16	0.033	1
Anthracene	2.8		mg/kg	0.16	0.054	1
Pyrene	7.0		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.3		mg/kg	0.16	0.031	1
Chrysene	3.5		mg/kg	0.16	0.029	1
Benzo(a)pyrene	2.6		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.3		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01 D
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:51
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.4	0.17	5
Benzo(b)fluoranthene	2.7		mg/kg	0.82	0.23	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:15
Analyst: CMM
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.23	0.028	1
Fluorene	0.20	J	mg/kg	0.23	0.022	1
Phenanthrene	0.72		mg/kg	0.14	0.028	1
Anthracene	0.28		mg/kg	0.14	0.044	1
Pyrene	1.1		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.68		mg/kg	0.14	0.026	1
Chrysene	0.64		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.038	1
Benzo(a)pyrene	0.88		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	0.68		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:49
Analyst: CMM
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.	E	mg/kg	0.24	0.030	1
Fluorene	0.93		mg/kg	0.24	0.024	1
Phenanthrene	3.9		mg/kg	0.15	0.030	1
Anthracene	1.1		mg/kg	0.15	0.048	1
Pyrene	2.5		mg/kg	0.15	0.024	1
Benzo(a)anthracene	1.5		mg/kg	0.15	0.027	1
Chrysene	1.5		mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	1.8		mg/kg	0.15	0.041	1
Benzo(a)pyrene	1.7		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	0.99		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03 D
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:27
Analyst: CMM
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	16.		mg/kg	1.2	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:32
Analyst: CMM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.19	0.023	1
Fluorene	0.20		mg/kg	0.19	0.018	1
Phenanthrene	0.96		mg/kg	0.11	0.023	1
Anthracene	0.27		mg/kg	0.11	0.037	1
Pyrene	0.76		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.49		mg/kg	0.11	0.021	1
Chrysene	0.44		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.57		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.51		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.28		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 01:05
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.38		mg/kg	0.18	0.022	1
Fluorene	0.71		mg/kg	0.18	0.018	1
Phenanthrene	4.6		mg/kg	0.11	0.022	1
Anthracene	1.4		mg/kg	0.11	0.035	1
Pyrene	3.6		mg/kg	0.11	0.018	1
Benzo(a)anthracene	2.2		mg/kg	0.11	0.020	1
Chrysene	1.9		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	2.2		mg/kg	0.11	0.030	1
Benzo(a)pyrene	1.9		mg/kg	0.14	0.044	1
Benzo(ghi)perylene	0.86		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:18
Analyst: CMM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.9		mg/kg	0.26	0.031	1
Fluorene	0.49		mg/kg	0.26	0.025	1
Phenanthrene	2.7		mg/kg	0.15	0.031	1
Anthracene	0.85		mg/kg	0.15	0.050	1
Pyrene	2.6		mg/kg	0.15	0.025	1
Benzo(a)anthracene	1.8		mg/kg	0.15	0.029	1
Chrysene	1.7		mg/kg	0.15	0.027	1
Benzo(b)fluoranthene	2.4		mg/kg	0.15	0.043	1
Benzo(a)pyrene	2.2		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	1.5		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:36
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.2		mg/kg	0.21	0.026	1
Fluorene	0.40		mg/kg	0.21	0.021	1
Phenanthrene	3.0		mg/kg	0.13	0.026	1
Anthracene	1.4		mg/kg	0.13	0.042	1
Pyrene	8.0		mg/kg	0.13	0.021	1
Benzo(a)anthracene	9.8	E	mg/kg	0.13	0.024	1
Chrysene	7.2		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	13.	E	mg/kg	0.13	0.036	1
Benzo(a)pyrene	12.	E	mg/kg	0.17	0.052	1
Benzo(ghi)perylene	5.4		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07 D
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:03
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)anthracene	8.5		mg/kg	0.64	0.12	5
Benzo(b)fluoranthene	10.		mg/kg	0.64	0.18	5
Benzo(a)pyrene	9.2		mg/kg	0.86	0.26	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:53
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	17.	E	mg/kg	0.25	0.030	1
Fluorene	0.79		mg/kg	0.25	0.024	1
Phenanthrene	4.0		mg/kg	0.15	0.030	1
Anthracene	1.4		mg/kg	0.15	0.049	1
Pyrene	3.9		mg/kg	0.15	0.025	1
Benzo(a)anthracene	2.9		mg/kg	0.15	0.028	1
Chrysene	3.0		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	4.4		mg/kg	0.15	0.042	1
Benzo(a)pyrene	4.0		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	2.6		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08 D
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 14:39
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.2	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 23:58
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.8		mg/kg	0.18	0.022	1
Fluorene	0.13	J	mg/kg	0.18	0.018	1
Phenanthrene	0.73		mg/kg	0.11	0.022	1
Anthracene	0.17		mg/kg	0.11	0.036	1
Pyrene	0.64		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.35		mg/kg	0.11	0.021	1
Chrysene	0.37		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.47		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.38		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.22		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10 D2
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 22:11
Analyst: LJG
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	150		mg/kg	2.9	0.59	20
Pyrene	160		mg/kg	2.9	0.48	20
Benzo(a)anthracene	55.		mg/kg	2.9	0.54	20
Chrysene	60.		mg/kg	2.9	0.50	20
Benzo(b)fluoranthene	56.		mg/kg	2.9	0.81	20
Benzo(a)pyrene	59.		mg/kg	3.9	1.2	20
Benzo(ghi)perylene	45.		mg/kg	3.9	0.57	20

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10 D
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 14:15
Analyst: CMM
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.4		mg/kg	0.48	0.059	2
Fluorene	18.		mg/kg	0.48	0.047	2
Phenanthrene	70.	E	mg/kg	0.29	0.059	2
Anthracene	16.		mg/kg	0.29	0.094	2
Pyrene	77.	E	mg/kg	0.29	0.048	2
Benzo(a)anthracene	30.	E	mg/kg	0.29	0.054	2
Chrysene	28.	E	mg/kg	0.29	0.050	2
Benzo(b)fluoranthene	26.	E	mg/kg	0.29	0.081	2
Benzo(a)pyrene	27.	E	mg/kg	0.39	0.12	2
Benzo(ghi)perylene	21.	E	mg/kg	0.39	0.057	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:27
Analyst: CMM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	8.0		mg/kg	0.26	0.031	1
Fluorene	0.68		mg/kg	0.26	0.025	1
Phenanthrene	2.6		mg/kg	0.16	0.031	1
Anthracene	0.96		mg/kg	0.16	0.050	1
Pyrene	1.7		mg/kg	0.16	0.026	1
Benzo(a)anthracene	1.1		mg/kg	0.16	0.029	1
Chrysene	1.2		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	1.9		mg/kg	0.16	0.044	1
Benzo(a)pyrene	1.8		mg/kg	0.21	0.063	1
Benzo(ghi)perylene	1.4		mg/kg	0.21	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:43
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	11.	E	mg/kg	0.23	0.028	1
Fluorene	0.68		mg/kg	0.23	0.022	1
Phenanthrene	2.1		mg/kg	0.14	0.028	1
Anthracene	0.71		mg/kg	0.14	0.045	1
Pyrene	1.6		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.4		mg/kg	0.14	0.026	1
Chrysene	1.4		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.5		mg/kg	0.14	0.039	1
Benzo(a)pyrene	2.3		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.7		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12 D
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 13:27
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	11.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:00
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.1		mg/kg	0.24	0.029	1
Fluorene	0.30		mg/kg	0.24	0.023	1
Phenanthrene	1.7		mg/kg	0.14	0.029	1
Anthracene	0.70		mg/kg	0.14	0.047	1
Pyrene	2.0		mg/kg	0.14	0.024	1
Benzo(a)anthracene	2.2		mg/kg	0.14	0.027	1
Chrysene	2.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.5		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.2		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.8		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	45		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:17
Analyst: CMM
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.1		mg/kg	0.23	0.028	1
Fluorene	0.26		mg/kg	0.23	0.022	1
Phenanthrene	1.6		mg/kg	0.14	0.028	1
Anthracene	0.68		mg/kg	0.14	0.044	1
Pyrene	1.6		mg/kg	0.14	0.022	1
Benzo(a)anthracene	1.2		mg/kg	0.14	0.026	1
Chrysene	1.3		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.0		mg/kg	0.14	0.038	1
Benzo(a)pyrene	1.8		mg/kg	0.18	0.055	1
Benzo(ghi)perylene	1.4		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	93		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:34
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	16.	E	mg/kg	0.24	0.029	1
Fluorene	0.81		mg/kg	0.24	0.023	1
Phenanthrene	2.7		mg/kg	0.14	0.029	1
Anthracene	0.59		mg/kg	0.14	0.046	1
Pyrene	0.83		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.41		mg/kg	0.14	0.027	1
Chrysene	0.47		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.59		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.40		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.33		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	92		30-120
4-Terphenyl-d14	87		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 13:03
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:51
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.0		mg/kg	0.23	0.028	1
Fluorene	0.38		mg/kg	0.23	0.022	1
Phenanthrene	1.5		mg/kg	0.14	0.028	1
Anthracene	0.50		mg/kg	0.14	0.045	1
Pyrene	1.2		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.2		mg/kg	0.14	0.026	1
Chrysene	1.2		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.8		mg/kg	0.14	0.039	1
Benzo(a)pyrene	1.8		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.0		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:08
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.6		mg/kg	0.24	0.029	1
Fluorene	0.40		mg/kg	0.24	0.023	1
Phenanthrene	2.5		mg/kg	0.14	0.029	1
Anthracene	0.77		mg/kg	0.14	0.047	1
Pyrene	2.0		mg/kg	0.14	0.024	1
Benzo(a)anthracene	1.6		mg/kg	0.14	0.027	1
Chrysene	1.4		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	2.0		mg/kg	0.14	0.040	1
Benzo(a)pyrene	1.9		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.2		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:24
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.	E	mg/kg	0.23	0.028	1
Fluorene	1.1		mg/kg	0.23	0.023	1
Phenanthrene	7.3		mg/kg	0.14	0.028	1
Anthracene	2.0		mg/kg	0.14	0.046	1
Pyrene	6.8		mg/kg	0.14	0.023	1
Benzo(a)anthracene	4.9		mg/kg	0.14	0.026	1
Chrysene	4.4		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	5.8		mg/kg	0.14	0.039	1
Benzo(a)pyrene	4.9		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	4.5		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	95		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 12:38
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:41
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.9		mg/kg	0.24	0.029	1
Fluorene	0.41		mg/kg	0.24	0.023	1
Phenanthrene	2.0		mg/kg	0.14	0.029	1
Anthracene	0.80		mg/kg	0.14	0.046	1
Pyrene	1.4		mg/kg	0.14	0.024	1
Benzo(a)anthracene	1.9		mg/kg	0.14	0.027	1
Chrysene	1.8		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.0		mg/kg	0.14	0.040	1
Benzo(a)pyrene	2.7		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.6		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	44		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 16:01
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	94		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 16:17
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	87		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/09/22 21:48
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-19 Batch: WG1721167-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 14:57
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 20-21 Batch: WG1721171-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.35		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	71		15-120
4-Terphenyl-d14	93		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-19 Batch: WG1721167-2 WG1721167-3								
Naphthalene	63		70		40-140	11		50
Fluorene	62		70		40-140	12		50
Phenanthrene	59		66		40-140	11		50
Anthracene	60		68		40-140	13		50
Pyrene	62		72		35-142	15		50
Benzo(a)anthracene	62		70		40-140	12		50
Chrysene	60		68		40-140	13		50
Benzo(b)fluoranthene	64		72		40-140	12		50
Benzo(a)pyrene	66		75		40-140	13		50
Benzo(ghi)perylene	60		69		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	85		98		23-120
2-Fluorobiphenyl	66		72		30-120
4-Terphenyl-d14	61		68		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 20-21 Batch: WG1721171-2 WG1721171-3								
Naphthalene	59		65		40-140	10		40
Fluorene	68		71		40-140	4		40
Phenanthrene	70		71		40-140	1		40
Anthracene	75		78		40-140	4		40
Pyrene	80		79		26-127	1		40
Benzo(a)anthracene	83		82		40-140	1		40
Chrysene	74		75		40-140	1		40
Benzo(b)fluoranthene	83		84		40-140	1		40
Benzo(a)pyrene	87		85		40-140	2		40
Benzo(ghi)perylene	83		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	81		91		23-120
2-Fluorobiphenyl	63		70		15-120
4-Terphenyl-d14	86		85		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	475		mg/kg	3.17	0.170	1	12/09/22 09:50	12/09/22 22:51	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	84.6		mg/kg	2.73	0.146	1	12/09/22 09:50	12/09/22 22:55	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	198		mg/kg	2.83	0.152	1	12/09/22 09:50	12/09/22 23:00	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	82.9		mg/kg	2.26	0.121	1	12/09/22 09:50	12/10/22 10:11	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	896		mg/kg	2.17	0.116	1	12/09/22 09:50	12/10/22 10:14	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	397		mg/kg	3.03	0.162	1	12/09/22 09:50	12/10/22 10:18	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	131		mg/kg	2.58	0.138	1	12/09/22 09:50	12/10/22 10:21	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	167		mg/kg	2.84	0.152	1	12/09/22 09:50	12/10/22 10:25	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7.08		mg/kg	2.13	0.114	1	12/09/22 09:50	12/10/22 10:28	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	284		mg/kg	2.91	0.156	1	12/09/22 09:50	12/10/22 10:31	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	383		mg/kg	2.95	0.158	1	12/09/22 09:50	12/10/22 10:35	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	255		mg/kg	2.76	0.148	1	12/09/22 09:50	12/10/22 10:38	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	80.6		mg/kg	2.82	0.151	1	12/09/22 09:50	12/10/22 10:42	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	296		mg/kg	2.67	0.143	1	12/09/22 09:50	12/10/22 10:59	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	287		mg/kg	2.80	0.150	1	12/09/22 09:50	12/10/22 11:03	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	160		mg/kg	2.76	0.148	1	12/09/22 09:50	12/10/22 11:06	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	113		mg/kg	2.84	0.152	1	12/09/22 09:50	12/10/22 11:09	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	129		mg/kg	2.78	0.149	1	12/09/22 09:50	12/10/22 11:13	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	212		mg/kg	2.83	0.152	1	12/09/22 09:50	12/10/22 11:16	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	18.21		ug/l	1.000	0.3430	1	12/09/22 09:35	12/13/22 22:52	EPA 3005A	1,6020B	WKP

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	0.9214	J	ug/l	1.000	0.3430	1	12/09/22 09:35	12/13/22 22:57	EPA 3005A	1,6020B	WKP

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-19 Batch: WG1721218-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/09/22 09:50	12/09/22 22:42	1,6010D	MRC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 20-21 Batch: WG1721257-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/09/22 09:35	12/09/22 13:17	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-19 Batch: WG1721218-2 SRM Lot Number: D116-540								
Lead, Total	101		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 20-21 Batch: WG1721257-2								
Lead, Total	104		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG1721218-3 QC Sample: L2268385-06 Client ID: MS Sample												
Lead, Total	4.57	82.8	80.3	91		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 20-21 QC Batch ID: WG1721257-3 QC Sample: L2268797-01 Client ID: MS Sample												
Lead, Total	0.5591J	530	500.1	94		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.2		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.8		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.3		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.2		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.3		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.6		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.7		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.7		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.5		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-16 QC Batch ID: WG1721482-1 QC Sample: L2268803-01 Client ID: GPR276-01-SS01						
Solids, Total	60.2	58.9	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 17-19 QC Batch ID: WG1721555-1 QC Sample: L2268350-01 Client ID: DUP Sample						
Solids, Total	86.7	84.7	%	2		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-01A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-01B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-01C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-01D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-01E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-01F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-02A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268803-02B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260H(14),PA-8260HLW(14)
L2268803-02C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260H(14),PA-8260HLW(14)
L2268803-02D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-02E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-02F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-03A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-03B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-03C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-03D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-03E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-03F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-04A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-04B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-04C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-04D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-04E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-04F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-05A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-05B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-05C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-05D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-05F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-06A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-06B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-06C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-06D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-06E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-06F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-07A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-07B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-07C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-07D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-07E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-07F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-08A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-08B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-08C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-08D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-08F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-09A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-09B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-09C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-09D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-09E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-09F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-10A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-10B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-10C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-10D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-10F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-11A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-11B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-11C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-11D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-11F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-12A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-12B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-12C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-12D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-12F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-13A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-13B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-13C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-13D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-13F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-14A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-14B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-14C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-14D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-14F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-15A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-15B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-15C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-15D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-15F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-16A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-16B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-16C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-16D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-16F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-17A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-17B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-17C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-17D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-17F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-18A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-18B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-18C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-18D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-18F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-19A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-19B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-19C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-19D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-19F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-20A	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20B	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20C	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20D	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-20E	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-20F	Plastic 250ml HNO3 preserved	B	<2	<2	3.7	Y	Absent		PB-6020T-PPB(180)
L2268803-20G	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-20H	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-20I	Plastic 120ml unpreserved	B	7	7	3.7	Y	Absent		ARCHIVE()
L2268803-21A	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21B	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21C	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21D	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-21E	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-21F	Plastic 250ml HNO3 preserved	B	<2	<2	3.7	Y	Absent		PB-6020T-PPB(180)
L2268803-21G	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-21H	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-21I	Plastic 120ml unpreserved	B	7	7	3.7	Y	Absent		ARCHIVE()
L2268803-22A	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-22B	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)
L2268803-22C	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)
L2268803-22D	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 12/8/22

ALPHA Job #: L2264403

ALPHA ANALYTICAL — Advancing Science

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~1761~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program: Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68803.01	GPR276-01-5501	12/7	1000	S	TS	☑	☑	☑		4
.02	GPR276-03-5501		1010			☑	☑	☑		
.03	GPR276-05-5501		1015			☑	☑	☑		
.04	GPR276-06-5501		1030			☑	☑	☑		
.05	GPR276-07-5501		1040			☑	☑	☑		
.06	GPR276-11-5501		1050			☑	☑	☑		
.07	GPR276-12-5501		1100			☑	☑	☑		
.08	GPR276-13-5501		1115			☑	☑	☑		
.09	GPR276-15-5501		1130			☑	☑	☑		
.10	GPR276-16-5501	↓	1140	↓	↓	☑	☑	☑		
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/7		
	12/7/22 8:07		12/7/22 1555
	12/7/22 1000		12-7-22 2200

12/8/22 0150

12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/8/22
ALPHA Job #: L2268803

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~13161~~ ~~17873~~ 18559

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info
PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program
Criteria

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68803.11	GPR276-17-SS01	12/7	1300	S	TS	☑	☑	☑		3
.12	GPR285-01-SS01	↓	1310	↓	↓	☑	☑	☑		3
.13	GPR285-02-SS01		1320			☑	☑	☑		3
.14	GPR285-03-SS01		1330			☑	☑	☑		3
.15	GPR285-07-SS01		1340			☑	☑	☑		3
.16	GPR285-08-SS01		1350			☑	☑	☑		3
.17	GPR285-11-SS01		1400			☑	☑	☑		3
.18	GPR285-13-SS01		1410			☑	☑	☑		3
.19	DUP-53		-			☑	☑	☑		3

	VOCs (8260)	SVOCs (8270)	Lead
Container Type	G	G	G
Preservative	F	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	12/7	[signature] AAL	12/7/22 1555
[signature] AAL	12/7/22 / 1800	[signature]	12-7 1800
[signature] AAL	12-7 2100	[signature]	12-7-22 2100
12/8/22 0150			

AAL 12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/8/22

ALPHA Job #: L2264803

ALPHA ANALYTICAL — Serving Clients Globally

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments
L2264803 -20	FB-221207-1	12/7	1200	W	TS	☑	☑	☑	
-21	FB-221207-2	↓	1410	W	↓	☑	☑	☑	
	TB-221207	↓	-	W	↓	☑	☑	☑	

Container Type	G	G	G	-	-	-	-	-	-	-	-	-
Preservative	F	A	A	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	12/7		12/7/22 1553
	12/7/22		12/7/22
	12/8/22 0150		12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

L2268803

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

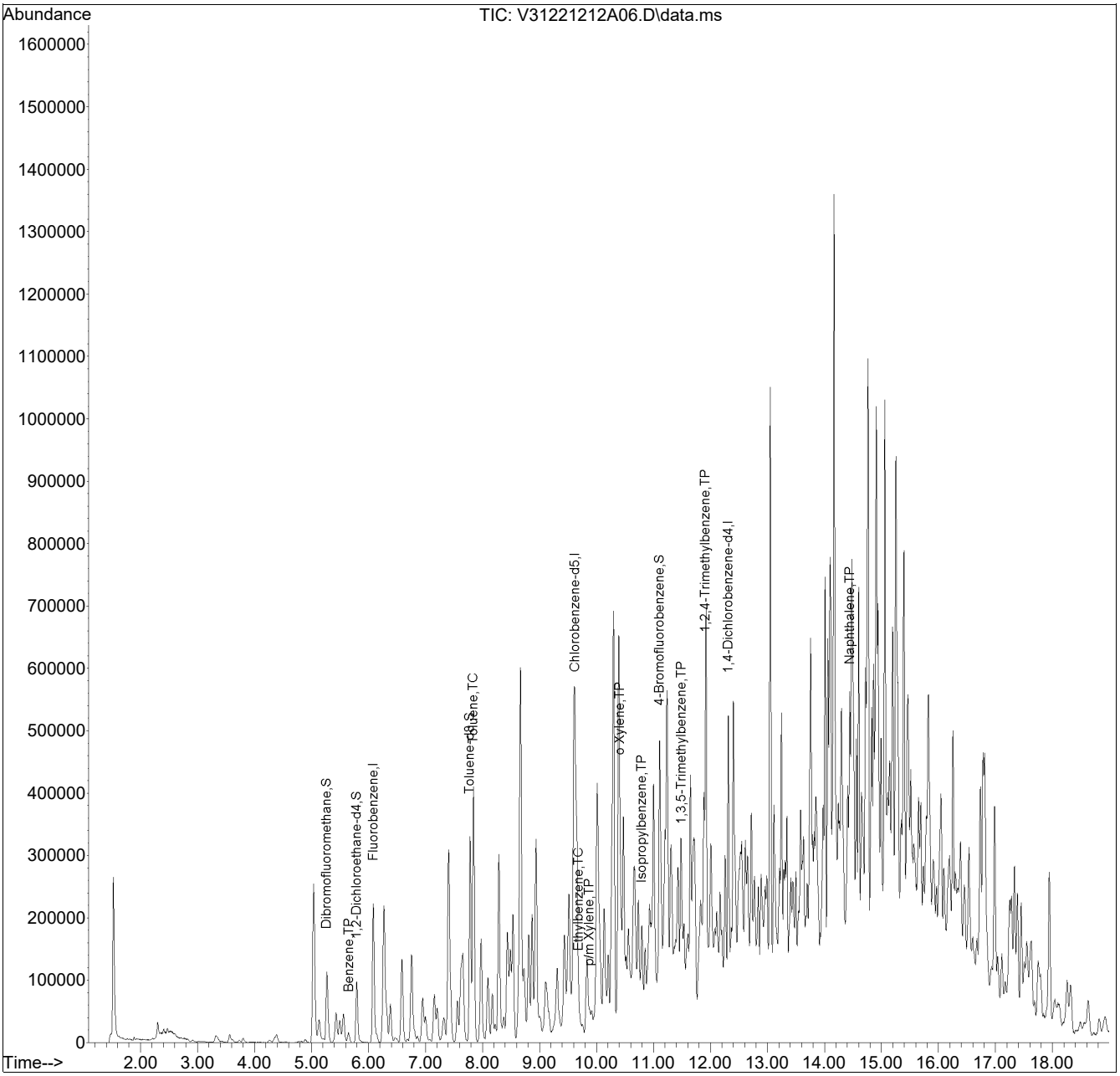
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212A\
Data File : V31221212A06.D
Acq On : 12 Dec 2022 09:54 am
Operator : VOA131:NLK
Sample : L2268803-01,31H,4.42,5,0.100,,A,R2F
Misc : WG1722683,ICAL19531
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 12 14:12:47 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V31221212A01.D•

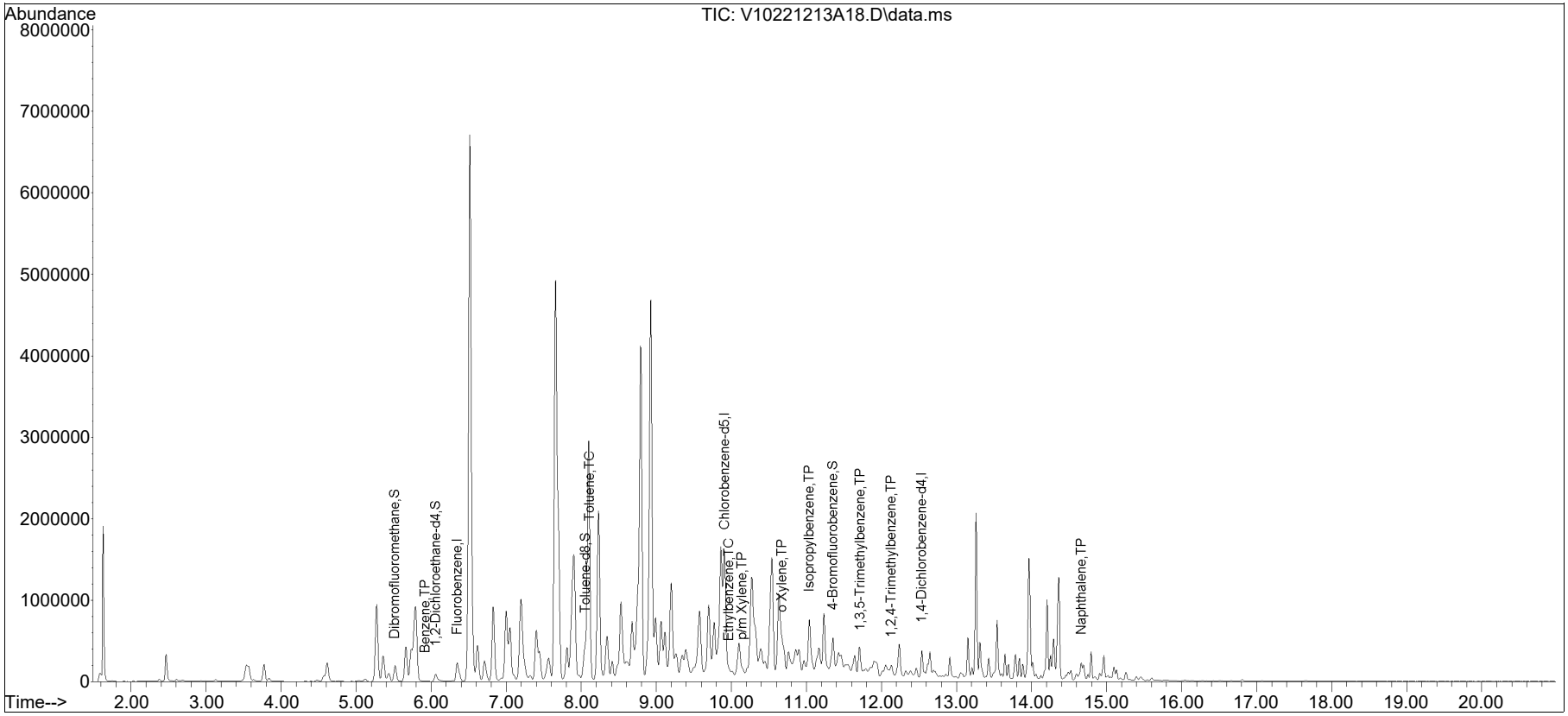


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221213A\
Data File : V10221213A18.D
Acq On : 13 Dec 2022 4:45 pm
Operator : VOA110:AJK
Sample : l2268803-02,31,4.10,5,,c,r2f
Misc : WG1722945,ICAL19281
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 13 18:29:34 2022
Quant Method : I:\VOLATILES\VOA110\2022\221213A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list13A\V10221213A01.D•

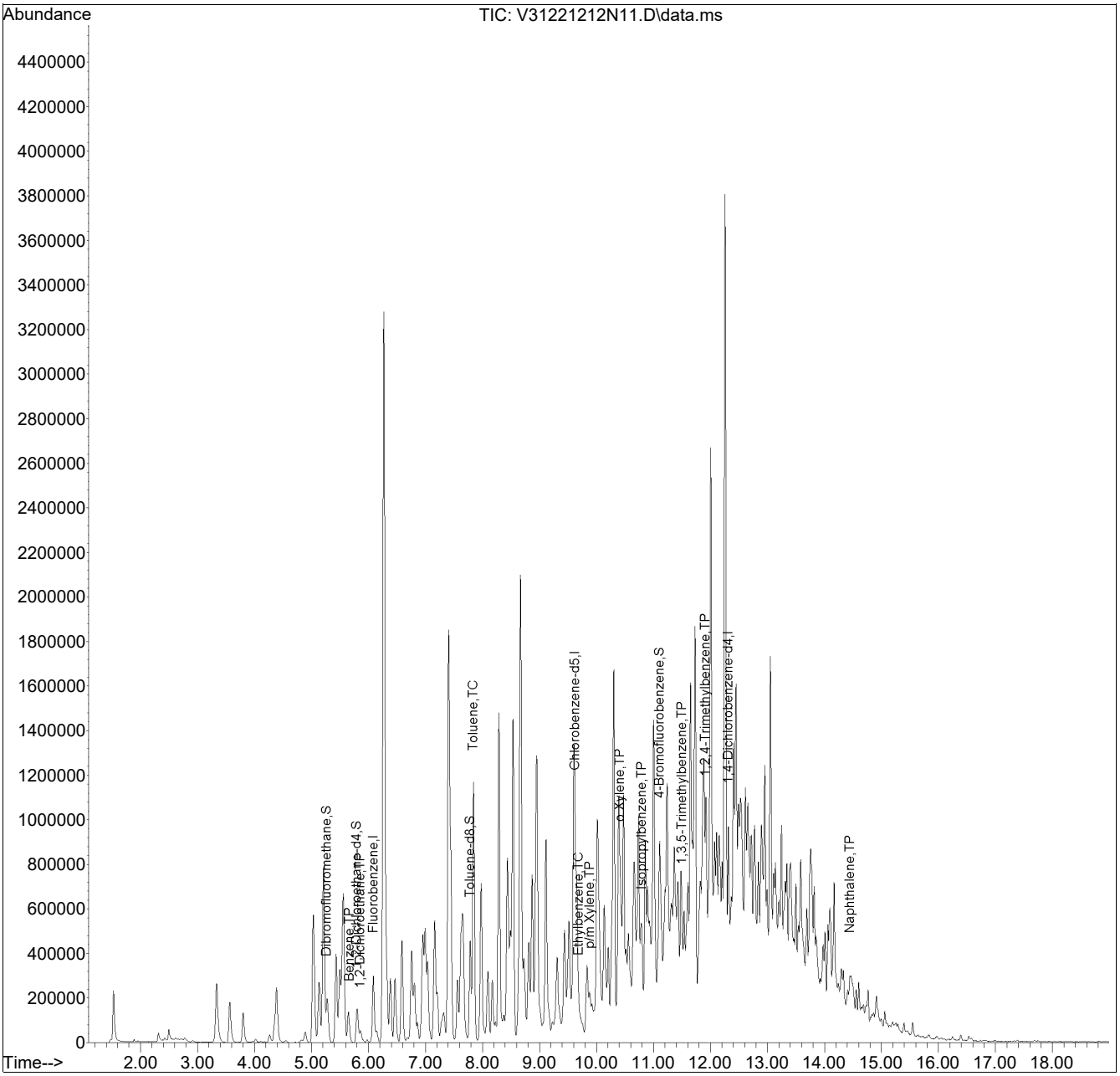


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N11.D
Acq On : 12 Dec 2022 10:38 pm
Operator : VOA131:NLK
Sample : L2268803-09,31H,5.65,5,0.100,,A,R2F
Misc : WG1722648,ICAL19531
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 13 07:50:51 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

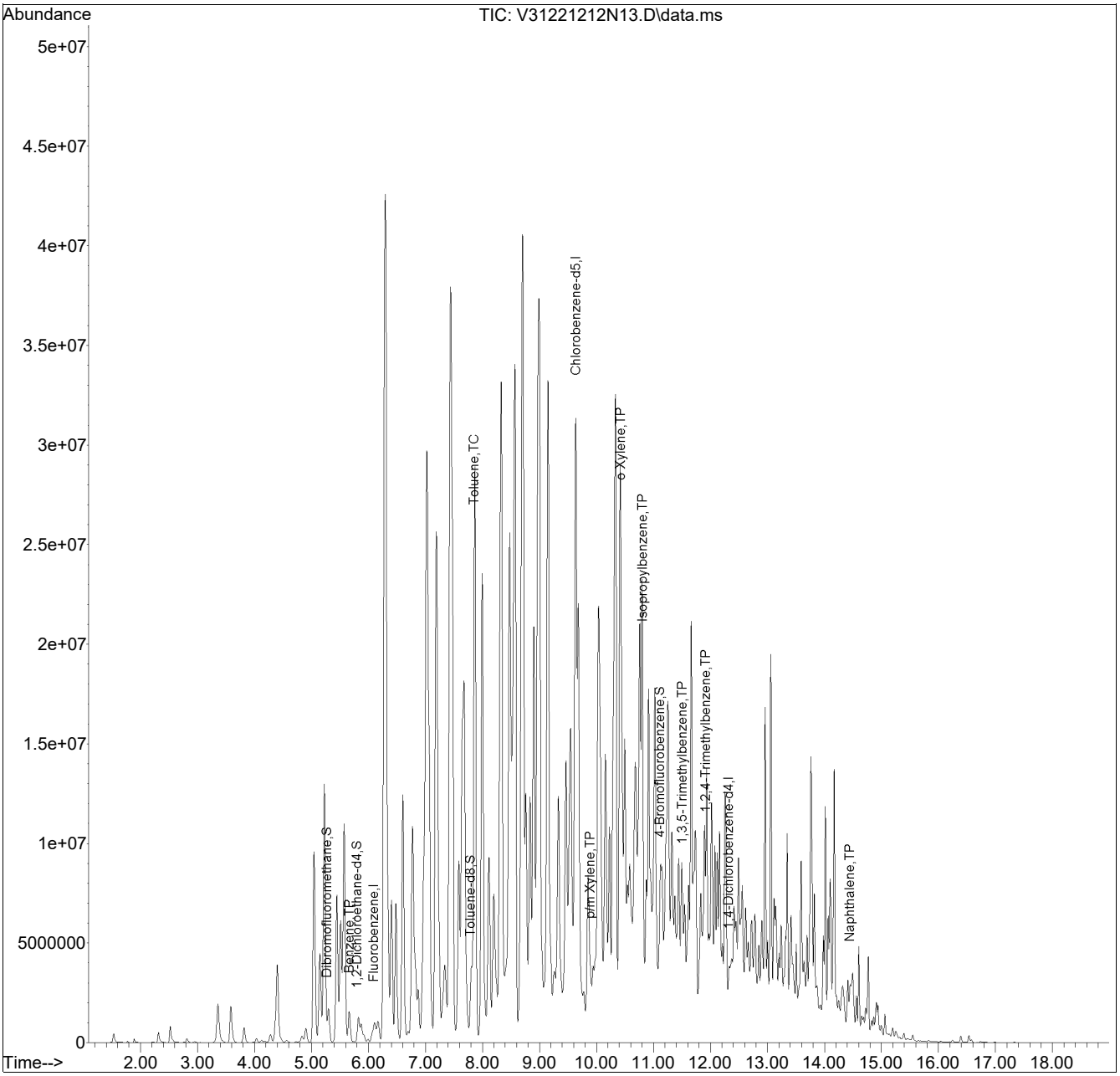


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N13.D
Acq On : 12 Dec 2022 11:24 pm
Operator : VOA131:NLK
Sample : L2268803-10,31,4.11,5,,B,R2F
Misc : WG1722651,ICAL19531
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 13 08:12:22 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

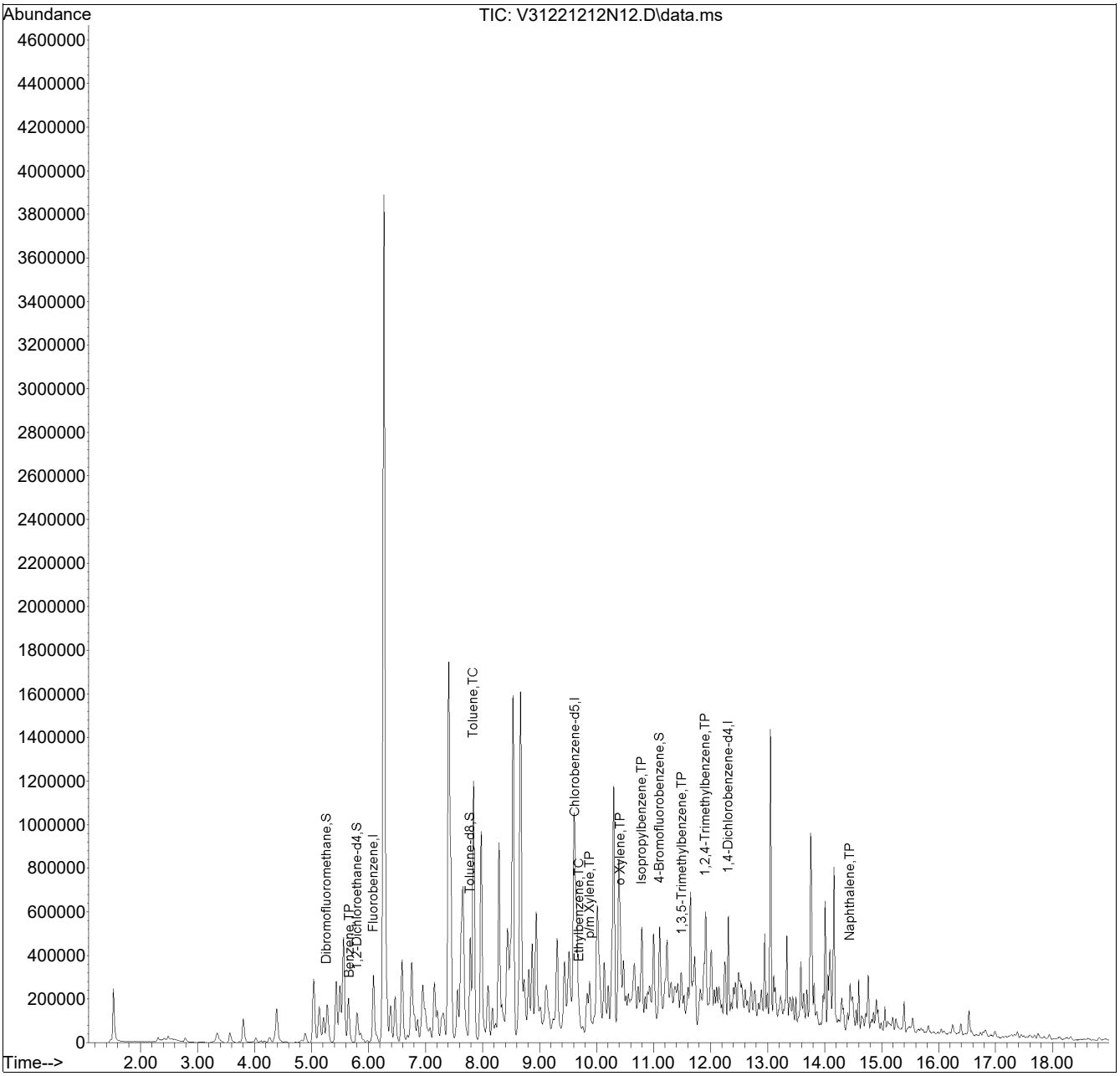


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N12.D
Acq On : 12 Dec 2022 11:01 pm
Operator : VOA131:NLK
Sample : L2268803-11,31H,4.30,5,0.100,,A,R2F
Misc : WG1722648,ICAL19531
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 13 08:11:48 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

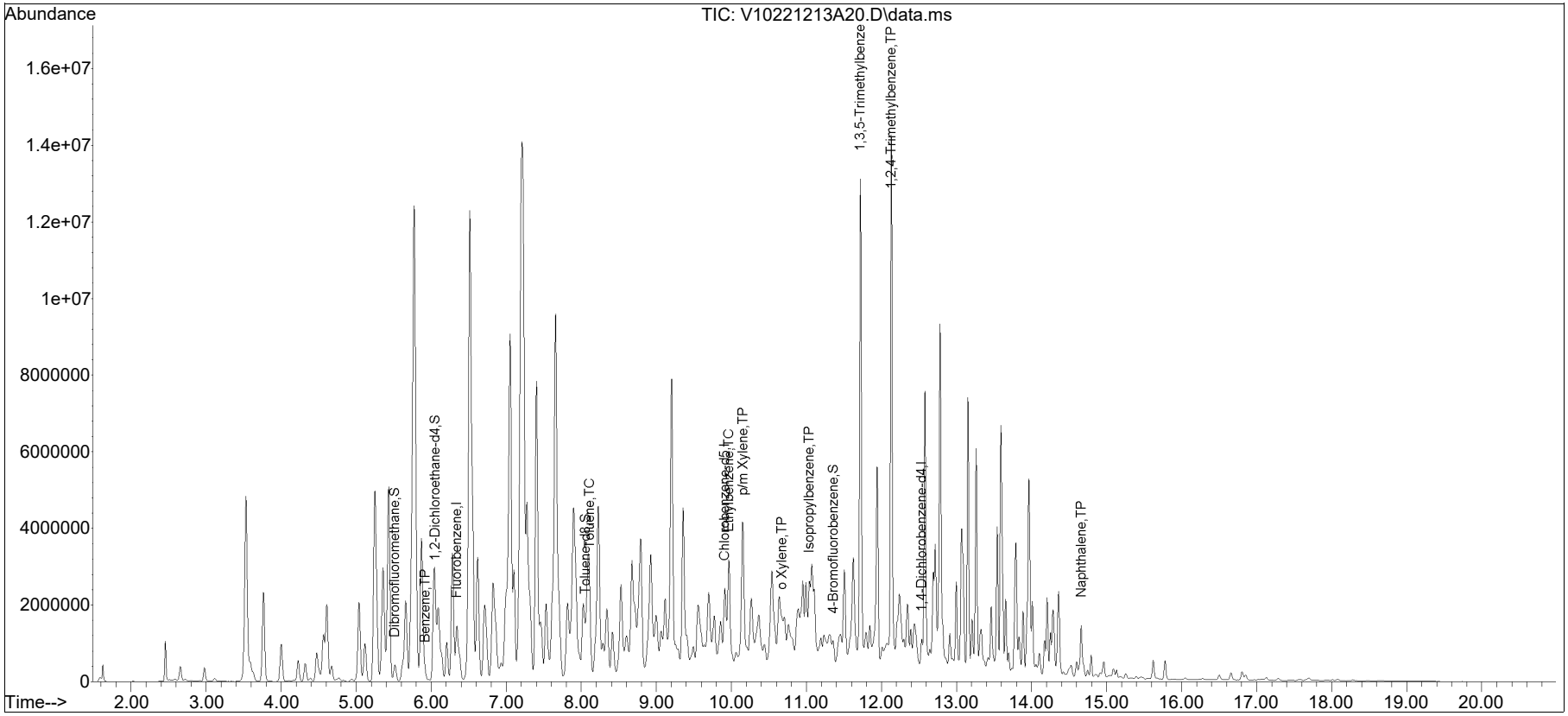


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221213A\
Data File : V10221213A20.D
Acq On : 13 Dec 2022 5:40 pm
Operator : VOA110:AJK
Sample : l2268803-18d2,31h,4.23,5,0.05,,a,r2f
Misc : WG1722950,ICAL19281
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 13 18:30:51 2022
Quant Method : I:\VOLATILES\VOA110\2022\221213A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list13A\\V10221213A01.D•



ANALYTICAL REPORT

Lab Number:	L2269124
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/15/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269124-01	GPR286-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:30	12/08/22
L2269124-02	GPR286-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:40	12/08/22
L2269124-03	GPR286-05-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:50	12/08/22
L2269124-04	GPR286-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:00	12/08/22
L2269124-05	GPR286-08-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:10	12/08/22
L2269124-06	GPR286-11-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:20	12/08/22
L2269124-07	GPR286-13-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:30	12/08/22
L2269124-08	GPR286-16-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:40	12/08/22
L2269124-09	GPR270-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:10	12/08/22
L2269124-10	GPR270-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:20	12/08/22
L2269124-11	GPR270-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:30	12/08/22
L2269124-12	GPR270-08-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:40	12/08/22
L2269124-13	GPR270-09-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:50	12/08/22
L2269124-14	GPR270-11-SS01	SOIL	PHILADELPHIA, PA	12/08/22 12:00	12/08/22
L2269124-15	GPR270-13-SS01	SOIL	PHILADELPHIA, PA	12/08/22 12:10	12/08/22
L2269124-16	GPR1047-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:00	12/08/22
L2269124-17	GPR1047-02-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:10	12/08/22
L2269124-18	GPR1047-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:20	12/08/22
L2269124-19	GPR1047-04-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:30	12/08/22
L2269124-20	GPR1047-06-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:35	12/08/22
L2269124-21	GPR1047-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:50	12/08/22
L2269124-22	DUP-54	SOIL	PHILADELPHIA, PA	12/08/22 00:00	12/08/22
L2269124-23	FB-221208-1	WATER	PHILADELPHIA, PA	12/08/22 12:00	12/08/22
L2269124-24	FB-221208-2	WATER	PHILADELPHIA, PA	12/08/22 14:55	12/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269124-25	TB-221208	WATER	PHILADELPHIA, PA	12/08/22 00:00	12/08/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2269124-06, -10, and -11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2269124-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (146%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-09: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2269124-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (226%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (163%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (159%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-13: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (133%) and 4-bromofluorobenzene (173%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-14: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (151%) and 4-

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative (continued)

bromofluorobenzene (188%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables

The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2269124-23, -24, and -25, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM

The WG1722646-1 Method Blank, associated with L2269124-23 and -24, has a concentration above the reporting limit for Benzo(a)anthracene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals

The WG1721469-3 MS recovery, performed on L2269124-01, is outside the acceptance criteria for lead (138%). A post digestion spike was performed and yielded unacceptable recoveries for lead (158%). The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.

The WG1721469-4 Laboratory Duplicate RPD for lead (34%), performed on L2269124-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/15/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 14:56
Analyst: AJK
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.25	0.025	1
Benzene	0.066		mg/kg	0.062	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.032	1
Toluene	1.2		mg/kg	0.12	0.067	1
1,2-Dibromoethane	ND		mg/kg	0.062	0.036	1
Ethylbenzene	1.9		mg/kg	0.12	0.017	1
p/m-Xylene	6.0		mg/kg	0.25	0.069	1
o-Xylene	1.1		mg/kg	0.12	0.036	1
Xylenes, Total	7.1		mg/kg	0.12	0.036	1
Isopropylbenzene	11.		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.37		mg/kg	0.25	0.024	1
1,2,4-Trimethylbenzene	5.2		mg/kg	0.25	0.041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:14
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00035	1
Benzene	ND		mg/kg	0.00086	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00096	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	0.00039	J	mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:40
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	ND		mg/kg	0.0013	0.00037	1
Xylenes, Total	ND		mg/kg	0.0013	0.00037	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:06
Analyst: NLK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00076	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	119		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:32
Analyst: NLK
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00085	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00085	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00095	1
o-Xylene	ND		mg/kg	0.0017	0.00049	1
Xylenes, Total	ND		mg/kg	0.0017	0.00049	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 11:45
Analyst: JIC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	ND		mg/kg	0.026	0.0086	1
1,2-Dichloroethane	ND		mg/kg	0.052	0.013	1
Toluene	ND		mg/kg	0.052	0.028	1
1,2-Dibromoethane	ND		mg/kg	0.026	0.015	1
Ethylbenzene	ND		mg/kg	0.052	0.0073	1
p/m-Xylene	ND		mg/kg	0.10	0.029	1
o-Xylene	0.051	J	mg/kg	0.052	0.015	1
Xylenes, Total	0.051	J	mg/kg	0.052	0.015	1
Isopropylbenzene	0.57		mg/kg	0.052	0.0057	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.010	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**146**	Q	70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:24
Analyst: NLK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:50
Analyst: NLK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:15
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.036	J	mg/kg	0.054	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	0.80		mg/kg	0.11	0.059	1
1,2-Dibromoethane	ND		mg/kg	0.054	0.032	1
Ethylbenzene	0.051	J	mg/kg	0.11	0.015	1
p/m-Xylene	0.13	J	mg/kg	0.22	0.061	1
o-Xylene	0.055	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.18	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.048	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	0.087	J	mg/kg	0.22	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 13:17
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0015	J	mg/kg	0.0033	0.00092	1
o-Xylene	0.0040		mg/kg	0.0016	0.00048	1
Xylenes, Total	0.0055	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.0058		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0031	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**226**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 11:22
Analyst: JIC
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	0.061		mg/kg	0.057	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	0.96		mg/kg	0.11	0.062	1
1,2-Dibromoethane	ND		mg/kg	0.057	0.034	1
Ethylbenzene	0.075	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.21	J	mg/kg	0.23	0.064	1
o-Xylene	0.039	J	mg/kg	0.11	0.033	1
Xylenes, Total	0.25	J	mg/kg	0.11	0.033	1
Isopropylbenzene	0.21		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.034	J	mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.12	J	mg/kg	0.23	0.038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**163**	Q	70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 10:59
Analyst: JIC
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	0.064	J	mg/kg	0.066	0.022	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.034	1
Toluene	0.99		mg/kg	0.13	0.072	1
1,2-Dibromoethane	ND		mg/kg	0.066	0.039	1
Ethylbenzene	0.075	J	mg/kg	0.13	0.019	1
p/m-Xylene	0.20	J	mg/kg	0.26	0.074	1
o-Xylene	0.083	J	mg/kg	0.13	0.038	1
Xylenes, Total	0.28	J	mg/kg	0.13	0.038	1
Isopropylbenzene	0.27		mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.035	J	mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	0.13	J	mg/kg	0.26	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:33
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00066	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	114		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:00
Analyst: NLK
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.0014	J	mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.00026	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0029	0.00082	1
o-Xylene	0.00080	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.00080	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.00073	J	mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00032	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0010	J	mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	**133**	Q	70-130
4-Bromofluorobenzene	**173**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:26
Analyst: NLK
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	0.00060	J	mg/kg	0.0017	0.00025	1
p/m-Xylene	0.00099	J	mg/kg	0.0035	0.00098	1
o-Xylene	0.0023		mg/kg	0.0017	0.00051	1
Xylenes, Total	0.0033	J	mg/kg	0.0017	0.00051	1
Isopropylbenzene	0.0033		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.00049	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.00098	J	mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	**151**	Q	70-130
4-Bromofluorobenzene	**188**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:52
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00077	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:59
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:03
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 16:10
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:23
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-25
Client ID: TB-221208
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 16:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-25
Client ID: TB-221208
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:44
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 23-25 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2269124

Project Number: 200.00135.006 **Report Date:** 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-05,07-08,12-15 Batch: WG1722715-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2269124

Project Number: 200.00135.006 **Report Date:** 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09 Batch: WG1722718-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 09:42
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 23-25 Batch: WG1722884-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1722950-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 06,10-11 Batch: WG1723588-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 09 Batch: WG1723589-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 23-25 Batch: WG1721462-2								
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-05,07-08,12-15 Batch: WG1722715-3 WG1722715-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG1722718-3 WG1722718-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 23-25 Batch: WG1722884-3 WG1722884-4								
Methyl tert butyl ether	98		95		63-130	3		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
p/m-Xylene	115		115		70-130	0		20
o-Xylene	115		115		70-130	0		20
Isopropylbenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		106		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	88		88		70-130
Dibromofluoromethane	113		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1722950-3 WG1722950-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	93		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 06,10-11 Batch: WG1723588-3 WG1723588-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	96		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09 Batch: WG1723589-3 WG1723589-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	95		96		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:15
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.	E	mg/kg	0.24	0.029	1
Fluorene	1.0		mg/kg	0.24	0.023	1
Phenanthrene	4.9		mg/kg	0.14	0.028	1
Anthracene	1.2		mg/kg	0.14	0.046	1
Pyrene	5.5		mg/kg	0.14	0.023	1
Benzo(a)anthracene	3.1		mg/kg	0.14	0.026	1
Chrysene	3.3		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	4.5		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.3		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	2.3		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01 D
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:11
Analyst: LJG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:39
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.4		mg/kg	0.25	0.031	1
Fluorene	0.27		mg/kg	0.25	0.025	1
Phenanthrene	1.4		mg/kg	0.15	0.031	1
Anthracene	0.39		mg/kg	0.15	0.050	1
Pyrene	1.1		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.97		mg/kg	0.15	0.029	1
Chrysene	0.95		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.4		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.1		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.67		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:03
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.037	1
Pyrene	ND		mg/kg	0.11	0.019	1
Benzo(a)anthracene	ND		mg/kg	0.11	0.021	1
Chrysene	ND		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.032	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	118		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:27
Analyst: JG
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.0		mg/kg	0.23	0.028	1
Fluorene	0.36		mg/kg	0.23	0.022	1
Phenanthrene	1.9		mg/kg	0.14	0.028	1
Anthracene	0.56		mg/kg	0.14	0.044	1
Pyrene	2.3		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.7		mg/kg	0.14	0.026	1
Chrysene	1.8		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.5		mg/kg	0.14	0.038	1
Benzo(a)pyrene	2.0		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.2		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:51
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.59		mg/kg	0.24	0.029	1
Fluorene	0.054	J	mg/kg	0.24	0.023	1
Phenanthrene	0.24		mg/kg	0.14	0.029	1
Anthracene	0.077	J	mg/kg	0.14	0.047	1
Pyrene	0.34		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.20		mg/kg	0.14	0.027	1
Chrysene	0.20		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.25		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.22		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**148**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:52
Analyst: JG
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.18	0.022	1
Fluorene	0.071	J	mg/kg	0.18	0.018	1
Phenanthrene	0.35		mg/kg	0.11	0.022	1
Anthracene	0.094	J	mg/kg	0.11	0.036	1
Pyrene	0.38		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.27		mg/kg	0.11	0.021	1
Chrysene	0.29		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.39		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.33		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.21		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:16
Analyst: JG
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.		mg/kg	0.26	0.032	1
Fluorene	0.46		mg/kg	0.26	0.025	1
Phenanthrene	2.1		mg/kg	0.16	0.032	1
Anthracene	0.90		mg/kg	0.16	0.051	1
Pyrene	1.6		mg/kg	0.16	0.026	1
Benzo(a)anthracene	1.7		mg/kg	0.16	0.029	1
Chrysene	1.8		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	2.8		mg/kg	0.16	0.044	1
Benzo(a)pyrene	2.5		mg/kg	0.21	0.064	1
Benzo(ghi)perylene	1.9		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:40
Analyst: JG
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.030	1
Fluorene	ND		mg/kg	0.24	0.024	1
Phenanthrene	0.031	J	mg/kg	0.15	0.030	1
Anthracene	ND		mg/kg	0.15	0.048	1
Pyrene	0.060	J	mg/kg	0.15	0.024	1
Benzo(a)anthracene	0.036	J	mg/kg	0.15	0.028	1
Chrysene	0.032	J	mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	ND		mg/kg	0.15	0.041	1
Benzo(a)pyrene	ND		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	ND		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:04
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.	E	mg/kg	0.25	0.031	1
Fluorene	2.1		mg/kg	0.25	0.025	1
Phenanthrene	5.8		mg/kg	0.15	0.031	1
Anthracene	2.7		mg/kg	0.15	0.049	1
Pyrene	6.1		mg/kg	0.15	0.025	1
Benzo(a)anthracene	3.2		mg/kg	0.15	0.028	1
Chrysene	3.6		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	3.7		mg/kg	0.15	0.043	1
Benzo(a)pyrene	3.1		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	2.2		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**126**	Q	23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09 D
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:34
Analyst: LJG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.		mg/kg	1.3	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:28
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.	E	mg/kg	0.25	0.030	1
Fluorene	6.0		mg/kg	0.25	0.024	1
Phenanthrene	22.	E	mg/kg	0.15	0.030	1
Anthracene	5.3		mg/kg	0.15	0.049	1
Pyrene	13.	E	mg/kg	0.15	0.025	1
Benzo(a)anthracene	4.8		mg/kg	0.15	0.028	1
Chrysene	5.4		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	3.3		mg/kg	0.15	0.042	1
Benzo(a)pyrene	2.9		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	1.4		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**189**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10 D
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 08:44
Analyst: LJG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.		mg/kg	1.2	0.15	5
Phenanthrene	23.		mg/kg	0.75	0.15	5
Pyrene	13.		mg/kg	0.75	0.12	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:52
Analyst: JG
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	9.1		mg/kg	0.28	0.034	1
Fluorene	5.4		mg/kg	0.28	0.027	1
Phenanthrene	19.	E	mg/kg	0.17	0.034	1
Anthracene	4.7		mg/kg	0.17	0.054	1
Pyrene	12.	E	mg/kg	0.17	0.028	1
Benzo(a)anthracene	4.4		mg/kg	0.17	0.031	1
Chrysene	4.8		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	3.5		mg/kg	0.17	0.047	1
Benzo(a)pyrene	2.8		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	1.4		mg/kg	0.22	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**196**	Q	23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11 D
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:58
Analyst: LJG
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	20.		mg/kg	0.84	0.17	5
Pyrene	12.		mg/kg	0.84	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:15
Analyst: JG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Fluorene	ND		mg/kg	0.23	0.022	1
Phenanthrene	0.053	J	mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.045	1
Pyrene	0.054	J	mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.045	J	mg/kg	0.14	0.026	1
Chrysene	0.037	J	mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.039	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.057	1
Benzo(ghi)perylene	ND		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:40
Analyst: JG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.7		mg/kg	0.22	0.027	1
Fluorene	5.0		mg/kg	0.22	0.022	1
Phenanthrene	13.	E	mg/kg	0.13	0.027	1
Anthracene	4.6		mg/kg	0.13	0.043	1
Pyrene	12.	E	mg/kg	0.13	0.022	1
Benzo(a)anthracene	4.8		mg/kg	0.13	0.025	1
Chrysene	4.9		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	4.0		mg/kg	0.13	0.037	1
Benzo(a)pyrene	3.2		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	1.6		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**178**	Q	23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13 D
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 08:21
Analyst: LJG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	13.		mg/kg	0.67	0.14	5
Pyrene	11.		mg/kg	0.67	0.11	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:04
Analyst: JG
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	19.	E	mg/kg	0.26	0.032	1
Fluorene	1.2		mg/kg	0.26	0.026	1
Phenanthrene	5.7		mg/kg	0.16	0.032	1
Anthracene	2.9		mg/kg	0.16	0.051	1
Pyrene	2.7		mg/kg	0.16	0.026	1
Benzo(a)anthracene	2.1		mg/kg	0.16	0.030	1
Chrysene	2.4		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	2.9		mg/kg	0.16	0.044	1
Benzo(a)pyrene	2.8		mg/kg	0.21	0.064	1
Benzo(ghi)perylene	3.5		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14 D
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 09:08
Analyst: LJG
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	20.		mg/kg	1.3	0.16	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:27
Analyst: JG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.030	J	mg/kg	0.20	0.024	1
Fluorene	0.046	J	mg/kg	0.20	0.019	1
Phenanthrene	0.31		mg/kg	0.12	0.024	1
Anthracene	0.091	J	mg/kg	0.12	0.038	1
Pyrene	0.42		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.32		mg/kg	0.12	0.022	1
Chrysene	0.37		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.42		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.32		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.20		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/14/22 10:28
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	66		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/14/22 10:44
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.01	J	ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	67		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/11/22 09:26
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-15 Batch: WG1721610-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	91		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/13/22 13:50
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 09:47

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 23-24 Batch: WG1722646-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.06		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	64		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-15 Batch: WG1721610-2 WG1721610-3								
Naphthalene	82		76		40-140	8		50
Fluorene	86		80		40-140	7		50
Phenanthrene	78		75		40-140	4		50
Anthracene	82		77		40-140	6		50
Pyrene	87		83		35-142	5		50
Benzo(a)anthracene	85		80		40-140	6		50
Chrysene	83		79		40-140	5		50
Benzo(b)fluoranthene	92		86		40-140	7		50
Benzo(a)pyrene	93		86		40-140	8		50
Benzo(ghi)perylene	86		81		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	117		23-120
2-Fluorobiphenyl	98		90		30-120
4-Terphenyl-d14	90		87		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 23-24 Batch: WG1722646-2 WG1722646-3								
Naphthalene	67		41		40-140	**48**	Q	40
Fluorene	72		43		40-140	**50**	Q	40
Phenanthrene	72		44		40-140	**48**	Q	40
Anthracene	75		45		40-140	**50**	Q	40
Pyrene	74		47		26-127	**45**	Q	40
Benzo(a)anthracene	78		47		40-140	**50**	Q	40
Chrysene	80		46		40-140	**54**	Q	40
Benzo(b)fluoranthene	78		46		40-140	**52**	Q	40
Benzo(a)pyrene	83		48		40-140	**53**	Q	40
Benzo(ghi)perylene	82		46		40-140	**56**	Q	40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	110		66		23-120
2-Fluorobiphenyl	69		42		15-120
4-Terphenyl-d14	71		46		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	143		mg/kg	2.80	0.150	1	12/10/22 00:05	12/10/22 14:22	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	295		mg/kg	2.94	0.158	1	12/10/22 00:05	12/10/22 14:12	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4.98		mg/kg	2.26	0.121	1	12/10/22 00:05	12/10/22 14:16	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	142		mg/kg	2.66	0.142	1	12/10/22 00:05	12/10/22 14:19	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	182		mg/kg	2.88	0.154	1	12/10/22 00:05	12/10/22 14:46	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	48.9		mg/kg	2.19	0.118	1	12/10/22 00:05	12/10/22 14:50	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	302		mg/kg	3.13	0.168	1	12/10/22 00:05	12/10/22 14:53	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7.52		mg/kg	2.93	0.157	1	12/10/22 00:05	12/10/22 14:57	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	341		mg/kg	3.01	0.161	1	12/10/22 00:05	12/10/22 15:00	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	450		mg/kg	3.05	0.164	1	12/10/22 00:05	12/10/22 15:03	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	537		mg/kg	3.42	0.184	1	12/10/22 00:05	12/10/22 15:07	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.9		mg/kg	2.85	0.153	1	12/10/22 00:05	12/10/22 15:10	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	400		mg/kg	2.62	0.140	1	12/10/22 00:05	12/10/22 15:14	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	589		mg/kg	3.04	0.163	1	12/10/22 00:05	12/10/22 15:17	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	215		mg/kg	2.36	0.126	1	12/10/22 00:05	12/10/22 15:27	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 08:39	EPA 3005A	1,6020B	EGW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 10:01	EPA 3005A	1,6020B	EGW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-15 Batch: WG1721469-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/10/22 00:05	12/10/22 14:05	1,6010D	NTB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 23-24 Batch: WG1721513-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 09:17	1,6020B	EGW

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 Batch: WG1721469-2 SRM Lot Number: D116-540								
Lead, Total	104		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 23-24 Batch: WG1721513-2								
Lead, Total	98		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG1721469-3 QC Sample: L2269124-01 Client ID: GPR286-01-SS01												
Lead, Total	143	58.8	224	**138**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 23-24 QC Batch ID: WG1721513-3 QC Sample: L2269204-01 Client ID: MS Sample												
Lead, Total	1.516	530	528.7	99		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG1721469-4 QC Sample: L2269124-01 Client ID: GPR286-01-SS01						
Lead, Total	143	201	mg/kg	**34**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.7		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.2		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	62.4		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-16
Client ID: GPR1047-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.5		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-17
Client ID: GPR1047-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 13:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	7.5		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-18
Client ID: GPR1047-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-19
Client ID: GPR1047-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.8		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-20
Client ID: GPR1047-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 13:35
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	9.0		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-21
Client ID: GPR1047-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 13:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.3		%	0.100	NA	1	-	12/09/22 18:26	121,2540G	MF
pH (H)	10.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-22
Client ID: DUP-54
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.5		%	0.100	NA	1	-	12/09/22 18:26	121,2540G	MF
pH (H)	10.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 16-22 Batch: WG1723412-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1721563-1 QC Sample: L2269124-01 Client ID: GPR286-01-SS01						
Solids, Total	68.7	67.8	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 21-22 QC Batch ID: WG1721568-1 QC Sample: L2266778-08 Client ID: DUP Sample						
Solids, Total	88.1	87.5	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 16-22 QC Batch ID: WG1723412-2 QC Sample: L2267361-01 Client ID: DUP Sample						
pH	8.4	8.3	SU	1		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-01A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-01B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-01C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-01D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-01F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-02A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-02B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-02C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-02D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-02F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-03A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-03B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-03C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-03D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-03F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-04A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-04B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-04C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-04D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-04F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-05A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-05B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-05C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-05D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-05F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-06A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-06B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-06C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-06D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-06F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-07A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-07B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-07C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-07D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-07F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-08A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-08B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-08C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-08D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-08F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-09A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2269124-09B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260H(14),PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-09C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260H(14),PA-8260HLW(14)
L2269124-09D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-09F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-10A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-10B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-10C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-10D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-10F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-11A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-11B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-11C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-11D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-11F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-12A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-12B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-12C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-12D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-12F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-13A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-13B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-13C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-13D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-13F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-14A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-14B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-14C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-14D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-14F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-15A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-15B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-15C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-15D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-15F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-16A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		TS(7),PH-9045(1)
L2269124-17A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		TS(7),PH-9045(1)
L2269124-18A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-19A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-20A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-21A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-22A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-23A	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23B	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23C	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23D	Vial Na2S2O3 preserved	B	NA		2.1	Y	Absent		8011(14)
L2269124-23E	Vial Na2S2O3 preserved	B	NA		2.1	Y	Absent		8011(14)
L2269124-23F	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		PB-6020T-PPB(180)
L2269124-23G	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-23H	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-24A	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-24B	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-24C	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-24D	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-24E	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		PB-6020T-PPB(180)
L2269124-24F	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-24G	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-25A	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-25B	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-25C	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-25D	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~17161~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
69124-01	GPR286-01-5501	12/8	0930	S	TS	☑	☑	☑		
-02	GPR286-03-5501		0940			☑	☑	☑		
-03	GPR286-05-5501		0950			☑	☑	☑		
-04	GPR286-07-5501		1000			☑	☑	☑		
-05	GPR286-08-5501		1010			☑	☑	☑		
-06	GPR286-11-5501		1020			☑	☑	☑		
-07	GPR286-13-5501		1030			☑	☑	☑		
-08	GPR286-16-5501		1040			☑	☑	☑		
-09	GPR270-01-5501		1110			☑	☑	☑		
-10	GPR270-03-5501	↓	1120	↓	↓	☑	☑	☑		
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/8 1456	SDOLLS AM	1454 12-8
SDOLLS AM	12.8.190		12.8.22 GW
	12.8 2100		12-9-22 0110

12/9/22 0110

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

ALPHA ANALYTICAL — Customer Service

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~17161~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	1,4-D	Sample Specific Comments	TOTAL # BOTTLES
2269124-11	GPR270-07-5501	12/6	1130	S	TS	☑	☑	☑	☐		4
-12	GPR 270-08-5501		1140			☑	☑	☑	☐		
-13	GPR 270-09-5501		1150			☑	☑	☑	☐		
-14	GPR 270-11-5501		1200			☑	☑	☑	☐		
-15	GPR 270-13-5501		1210			☑	☑	☑	☐		
-16	GPR1047-01-5501		1300			☐	☐	☐	☑		
-17	GPR 1047-02-5501		1310			☐	☐	☐	☑		
-18	GPR 1047-03-5501		1320			☐	☐	☐	☑		
-19	GPR 1047-04-5501		1330			☐	☐	☐	☑		
-20	GPR 1047-06-5501	↓	1335	↓	↓	☐	☐	☐	☑		
	Container Type					G	G	G	-		
	Preservative					F	A	A	-		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Relinquished By:	Date/Time	Received By:	Date/Time
	11/16 1456		
	12-8-22 16		12-8-22 1415
	12-8 2120		12-9-22 2140

12/9/22 0110

12/9/22 0110

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

ALPHA ANALYTICAL — Advancing Performance

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	PAH									Sample Specific Comments	TOTAL # BOTTLES
69124-21	GPR1047-07-5501	12/8	1350	S	TS	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
	~~GPR1047-07-5502~~			S		☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-22	DUP-5.4	12/8	-	S		☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-23	FB-221208-1		1200	W		☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-24	FB-22-1208-2		~~1155~~	W		☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	1455	
-25	TB-22-1208			W		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
				Container Type		G	G	G	-	-	-	-	-	-	-	-	-		
				Preservative		F	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/8 1456	STL SEAFS	12-8-22 1456
SCHMIDT	12-8-22 1810		12.9.22 10:20
			12.8.22 2140

12/9/22 0110

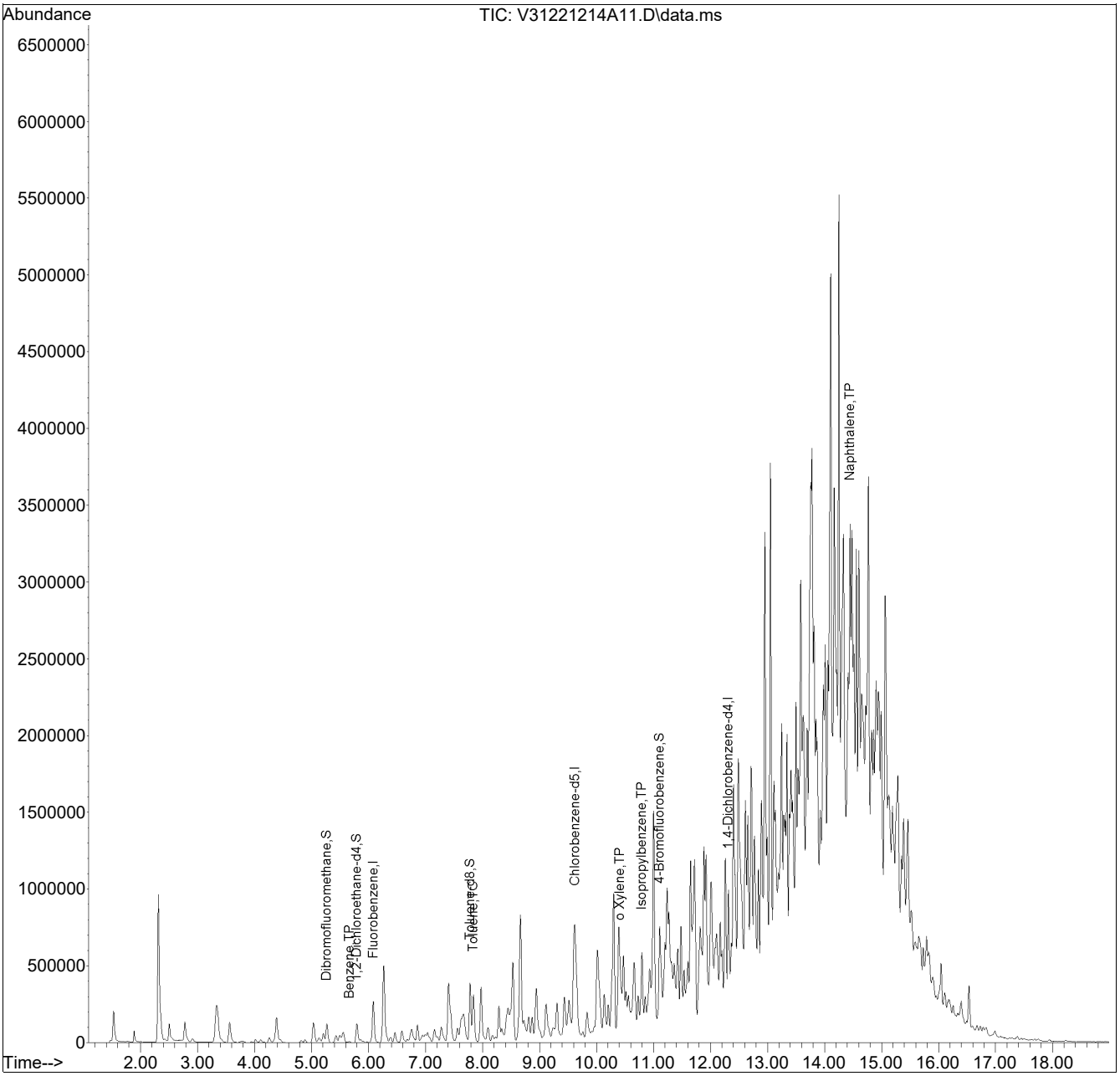
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A11.D
Acq On : 14 Dec 2022 11:45 am
Operator : VOA131:JIC
Sample : L2269124-06,31H,6.11,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 14 13:27:05 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

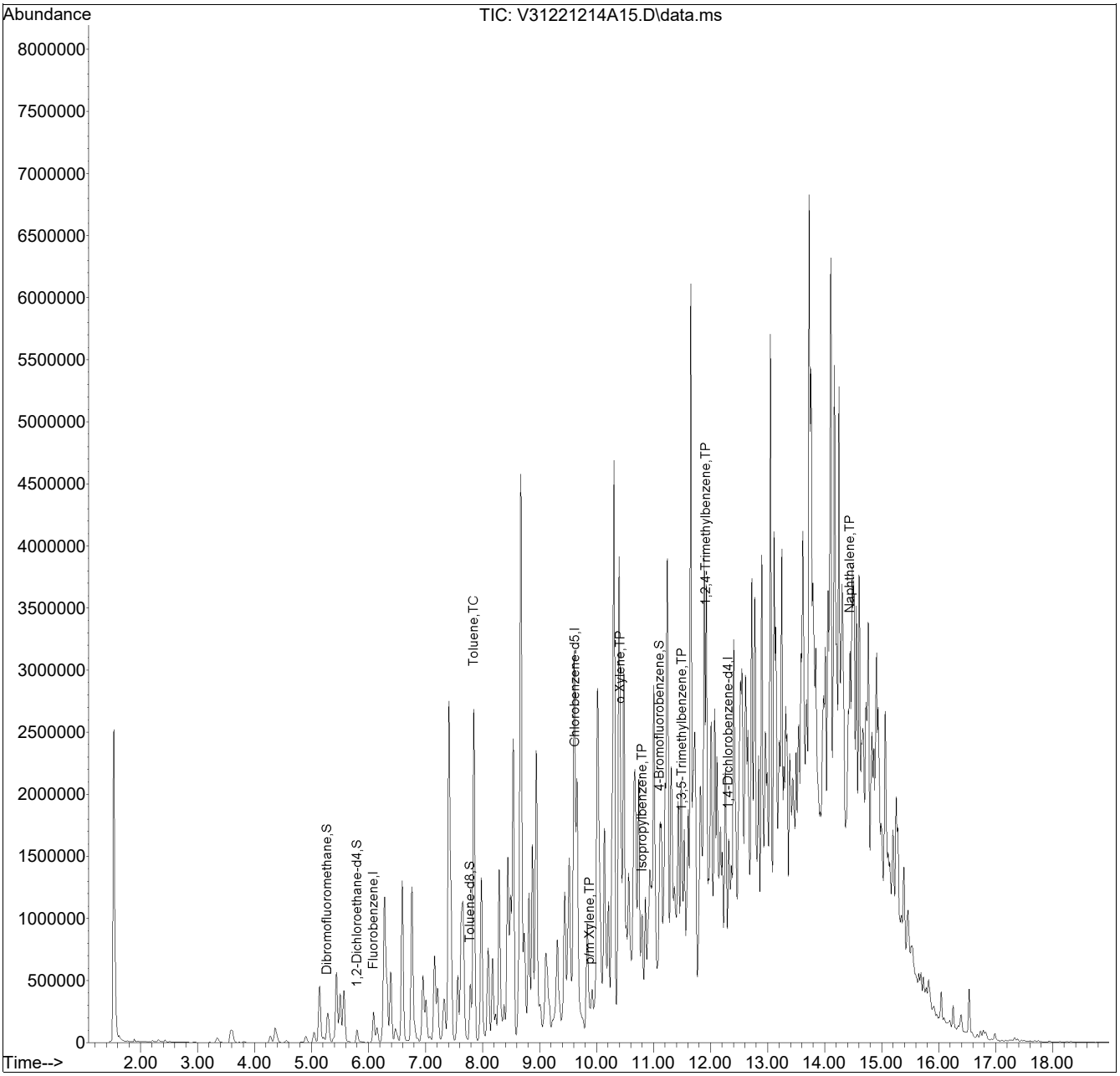


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A15.D
Acq On : 14 Dec 2022 01:17 pm
Operator : VOA131:NLK
Sample : L2269124-09,31,4.71,5,,C,R2F
Misc : WG1723589,ICAL19531
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 14 13:48:55 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

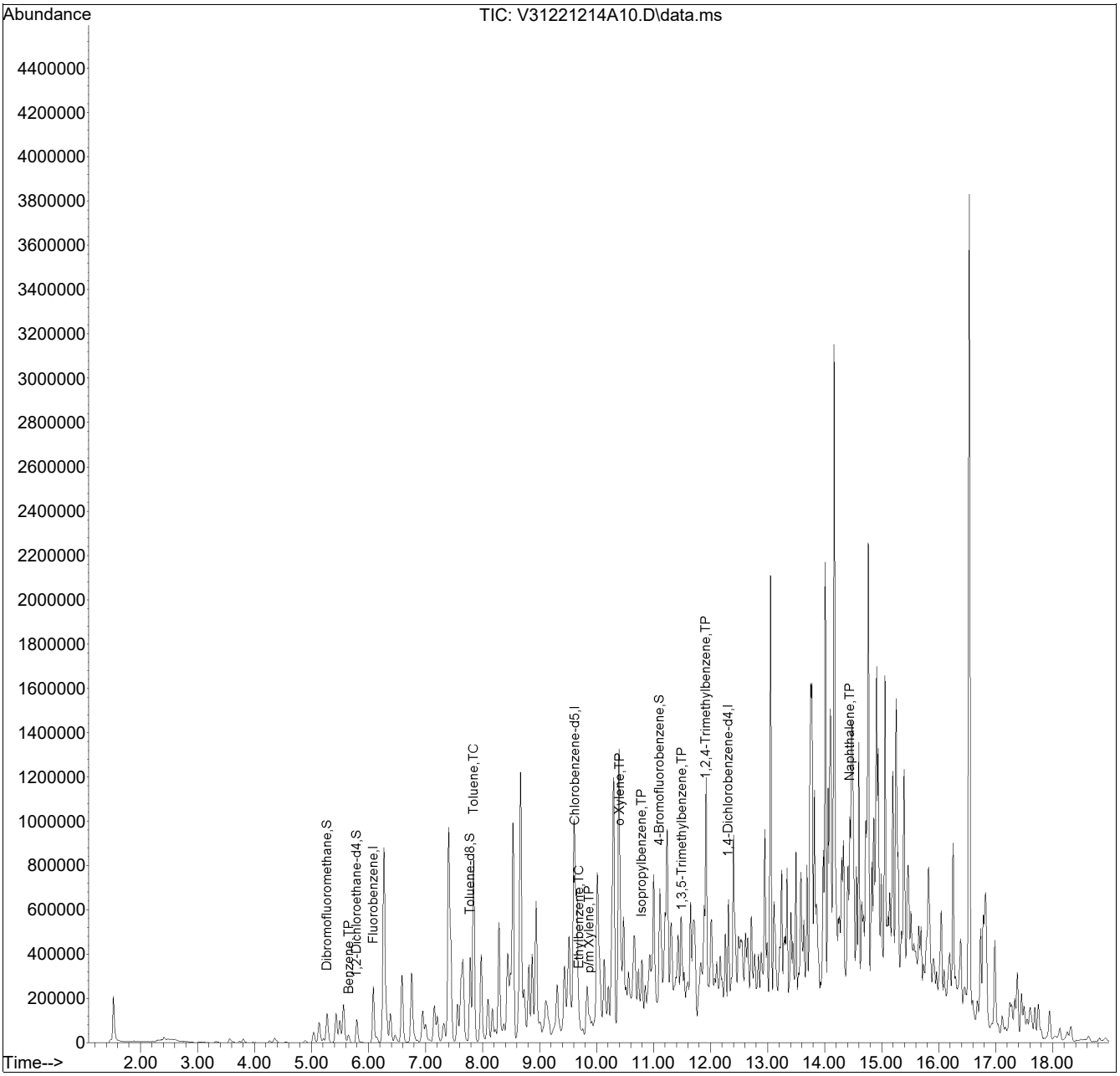


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A10.D
Acq On : 14 Dec 2022 11:22 am
Operator : VOA131:JIC
Sample : L2269124-10,31H,4.40,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 14 13:26:39 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

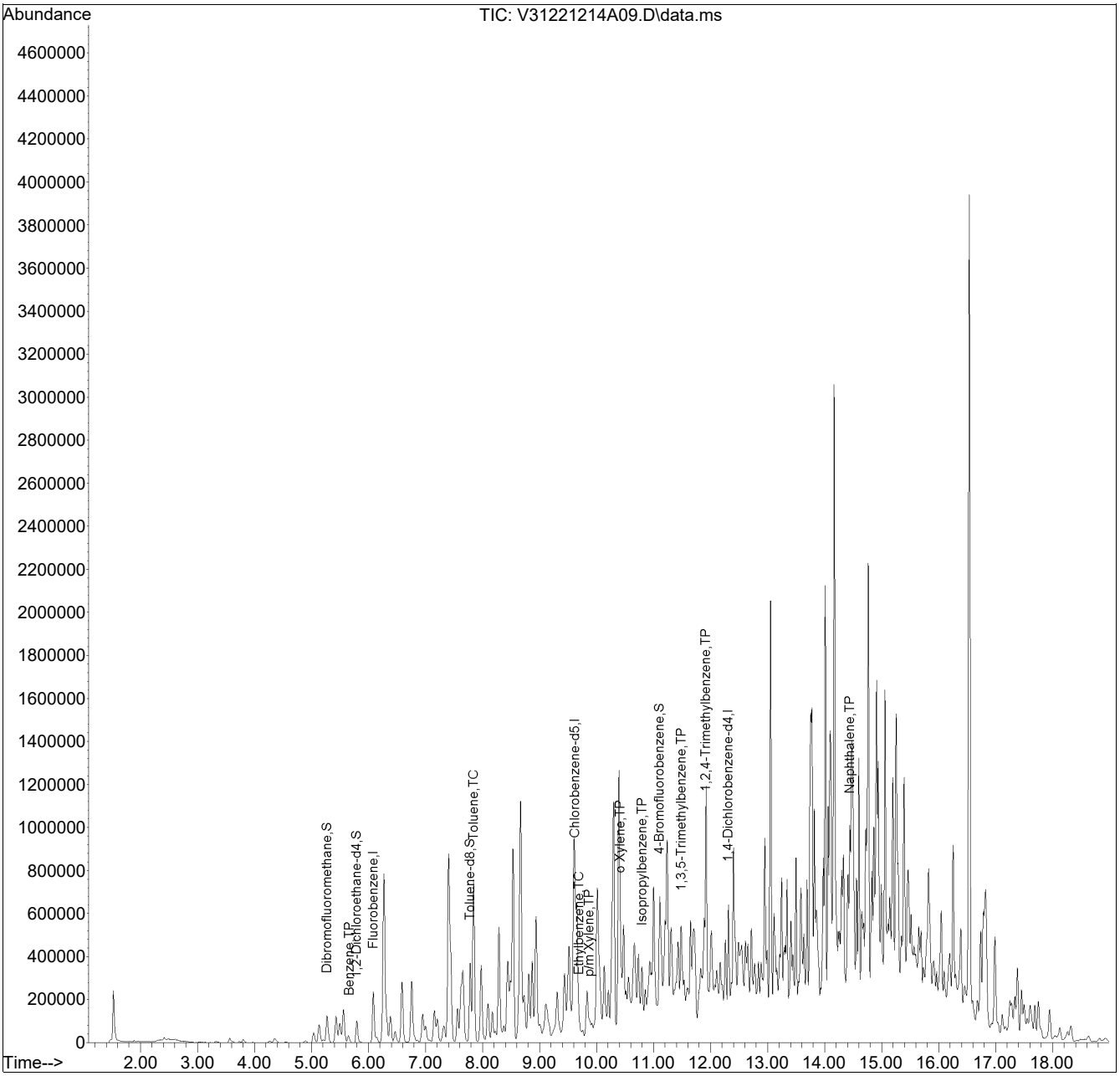


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A09.D
Acq On : 14 Dec 2022 10:59 am
Operator : VOA131:JIC
Sample : L2269124-11,31H,4.47,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 14 13:26:12 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

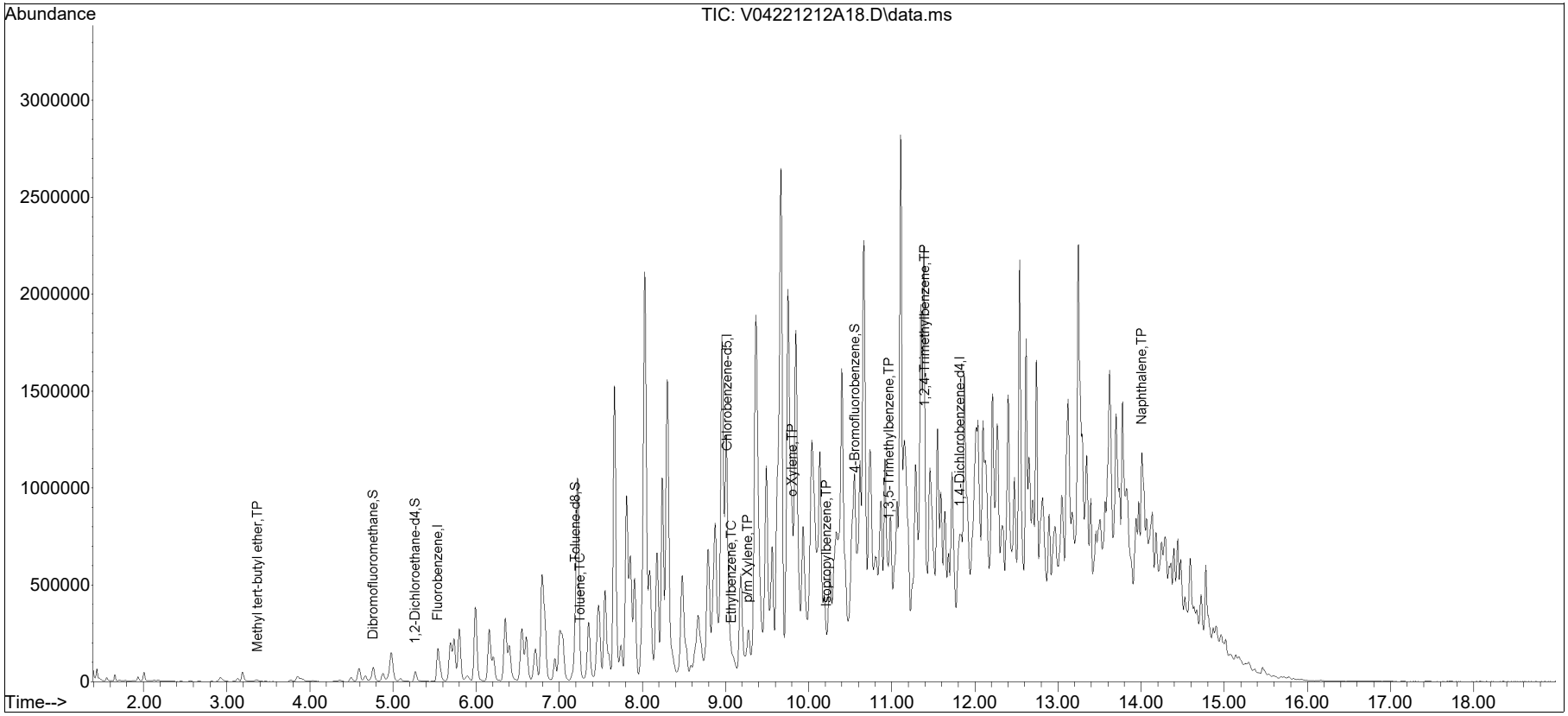


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA104\2022\221212A\
Data File : V04221212A18.D
Acq On : 12 Dec 2022 6:00 pm
Operator : VOA104:NLK
Sample : L2269124-13,31,4.63,5,,B,R2F
Misc : WG1722715,ICAL19471
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 13 11:44:38 2022
Quant Method : I:\VOLATILES\VOA104\2022\221212A\V104_221109N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 10 09:20:34 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V04221212A01.D•

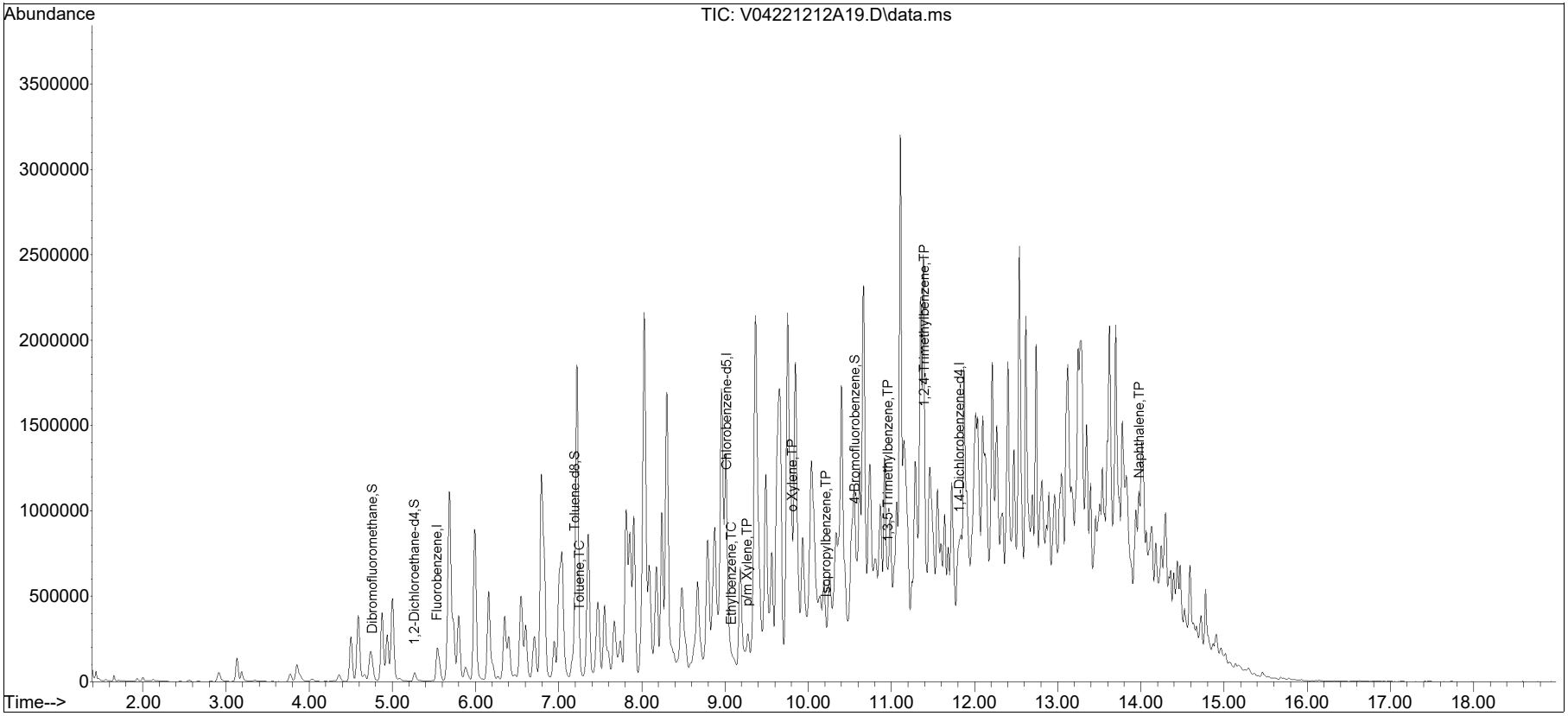


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA104\2022\221212A\
Data File : V04221212A19.D
Acq On : 12 Dec 2022 6:26 pm
Operator : VOA104:NLK
Sample : L2269124-14,31,4.59,5,,B,R2F
Misc : WG1722715,ICAL19471
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Dec 13 11:44:55 2022
Quant Method : I:\VOLATILES\VOA104\2022\221212A\V104_221109N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 10 09:20:34 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V04221212A01.D•



V104_221109N_8260.m Tue Dec 13 12:02:55 2022 Page: 2

ANALYTICAL REPORT

Lab Number:	L2269475
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/16/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269475-01	GPR1101-01-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:00	12/09/22
L2269475-02	GPR1101-02-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:10	12/09/22
L2269475-03	GPR1101-03-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:20	12/09/22
L2269475-04	GPR1101-04-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:30	12/09/22
L2269475-05	GPR1101-05-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:40	12/09/22
L2269475-06	TB-221209		PHILADELPHIA, PA	12/09/22 00:00	12/09/22
L2269475-07	FB-221209		PHILADELPHIA, PA	12/09/22 11:00	12/09/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2269475-06: A sample identified as "TB-221209" was listed on the Chain of Custody, but not received. This was verified by the client.

L2269475-07: A sample identified as "FB-221209" was listed on the Chain of Custody, but not received. This was verified by the client.

Volatile Organics

L2269475-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (212%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269475-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (149%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269475-02: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2269475-03: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2269475-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (170%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 12/16/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:54
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	1
Benzene	0.10		mg/kg	0.047	0.015	1
1,2-Dichloroethane	ND		mg/kg	0.093	0.024	1
Toluene	0.27		mg/kg	0.093	0.051	1
1,2-Dibromoethane	ND		mg/kg	0.047	0.027	1
Ethylbenzene	0.055	J	mg/kg	0.093	0.013	1
p/m-Xylene	0.36		mg/kg	0.19	0.052	1
o-Xylene	0.083	J	mg/kg	0.093	0.027	1
Xylenes, Total	0.44	J	mg/kg	0.093	0.027	1
Isopropylbenzene	3.9		mg/kg	0.093	0.010	1
1,3,5-Trimethylbenzene	0.028	J	mg/kg	0.19	0.018	1
1,2,4-Trimethylbenzene	0.40		mg/kg	0.19	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**212**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 19:44
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.15	0.015	1
Benzene	0.080		mg/kg	0.037	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.074	0.019	1
Toluene	0.20		mg/kg	0.074	0.040	1
1,2-Dibromoethane	ND		mg/kg	0.037	0.022	1
Ethylbenzene	0.16		mg/kg	0.074	0.010	1
p/m-Xylene	0.64		mg/kg	0.15	0.041	1
o-Xylene	0.12		mg/kg	0.074	0.021	1
Xylenes, Total	0.76		mg/kg	0.074	0.021	1
Isopropylbenzene	0.39		mg/kg	0.074	0.0080	1
1,3,5-Trimethylbenzene	0.064	J	mg/kg	0.15	0.014	1
1,2,4-Trimethylbenzene	0.30		mg/kg	0.15	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 13:40
Analyst: AJK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00030	1
Benzene	0.00043	J	mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.0012	J	mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	0.00082	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	0.010		mg/kg	0.0029	0.00082	1
o-Xylene	0.0039		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.014		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.045		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00082	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0037		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**149**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:31
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.20	0.020	1
Benzene	0.022	J	mg/kg	0.050	0.016	1
1,2-Dichloroethane	ND		mg/kg	0.10	0.026	1
Toluene	0.30		mg/kg	0.10	0.054	1
1,2-Dibromoethane	ND		mg/kg	0.050	0.029	1
Ethylbenzene	0.047	J	mg/kg	0.10	0.014	1
p/m-Xylene	0.075	J	mg/kg	0.20	0.056	1
o-Xylene	0.066	J	mg/kg	0.10	0.029	1
Xylenes, Total	0.14	J	mg/kg	0.10	0.029	1
Isopropylbenzene	1.1		mg/kg	0.10	0.011	1
1,3,5-Trimethylbenzene	0.13	J	mg/kg	0.20	0.019	1
1,2,4-Trimethylbenzene	0.70		mg/kg	0.20	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**170**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D2
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 14:03
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	51.		mg/kg	1.6	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:36
Analyst: NLK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.31	0.031	2
Benzene	0.23		mg/kg	0.078	0.026	2
1,2-Dichloroethane	ND		mg/kg	0.16	0.040	2
Toluene	0.29		mg/kg	0.16	0.085	2
1,2-Dibromoethane	ND		mg/kg	0.078	0.046	2
Ethylbenzene	0.30		mg/kg	0.16	0.022	2
p/m-Xylene	1.6		mg/kg	0.31	0.087	2
o-Xylene	1.1		mg/kg	0.16	0.045	2
Xylenes, Total	2.7		mg/kg	0.16	0.045	2
Isopropylbenzene	1.9		mg/kg	0.16	0.017	2
1,3,5-Trimethylbenzene	21.		mg/kg	0.31	0.030	2
1,2,4-Trimethylbenzene	48.	E	mg/kg	0.31	0.052	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	79		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:08
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0012	J	mg/kg	0.0024	0.00067	1
o-Xylene	0.00097	J	mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0022	J	mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0065		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0020	J	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,04 Batch: WG1722718-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01,03-04 Batch: WG1723588-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,05 Batch: WG1723589-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,04 Batch: WG1722718-3 WG1722718-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1723588-3 WG1723588-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	96		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,05 Batch: WG1723589-3 WG1723589-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	95		96		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:51
Analyst: SLR
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.24	0.029	1
Fluorene	3.2		mg/kg	0.24	0.023	1
Phenanthrene	10.	E	mg/kg	0.14	0.029	1
Anthracene	1.4		mg/kg	0.14	0.046	1
Pyrene	1.4		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.50		mg/kg	0.14	0.027	1
Chrysene	0.57		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.38		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.30		mg/kg	0.19	0.058	1
Indeno(1,2,3-cd)pyrene	0.23		mg/kg	0.19	0.033	1
Benzo(ghi)perylene	0.25		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**231**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01 D
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 08:28
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	12.		mg/kg	0.28	0.058	2

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:27
Analyst: SLR
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.22		mg/kg	0.20	0.025	1
Fluorene	0.12	J	mg/kg	0.20	0.020	1
Phenanthrene	0.33		mg/kg	0.12	0.025	1
Anthracene	0.21		mg/kg	0.12	0.040	1
Pyrene	0.48		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.066	J	mg/kg	0.12	0.023	1
Chrysene	0.20		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.11	J	mg/kg	0.12	0.035	1
Benzo(a)pyrene	0.11	J	mg/kg	0.16	0.050	1
Indeno(1,2,3-cd)pyrene	0.086	J	mg/kg	0.16	0.029	1
Benzo(ghi)perylene	0.18		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	45		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:03
Analyst: SLR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.37		mg/kg	0.22	0.027	1
Fluorene	0.53		mg/kg	0.22	0.022	1
Phenanthrene	1.2		mg/kg	0.13	0.027	1
Anthracene	0.22		mg/kg	0.13	0.044	1
Pyrene	0.32		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.16		mg/kg	0.13	0.025	1
Chrysene	0.18		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	0.17		mg/kg	0.13	0.038	1
Benzo(a)pyrene	0.14	J	mg/kg	0.18	0.055	1
Indeno(1,2,3-cd)pyrene	0.12	J	mg/kg	0.18	0.031	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**126**	Q	23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D2
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 12:34
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	40.		mg/kg	3.0	0.62	25

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 08:52
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	1.0	0.12	5
Fluorene	17.		mg/kg	1.0	0.098	5
Phenanthrene	46.	E	mg/kg	0.61	0.12	5
Anthracene	6.9		mg/kg	0.61	0.20	5
Pyrene	8.3		mg/kg	0.61	0.10	5
Benzo(a)anthracene	1.3		mg/kg	0.61	0.11	5
Chrysene	2.7		mg/kg	0.61	0.10	5
Benzo(b)fluoranthene	0.67		mg/kg	0.61	0.17	5
Benzo(a)pyrene	0.60	J	mg/kg	0.81	0.25	5
Indeno(1,2,3-cd)pyrene	0.26	J	mg/kg	0.81	0.14	5
Benzo(ghi)perylene	0.50	J	mg/kg	0.81	0.12	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	38		30-120
4-Terphenyl-d14	35		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:15
Analyst: SLR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.098	J	mg/kg	0.20	0.024	1
Fluorene	0.081	J	mg/kg	0.20	0.019	1
Phenanthrene	0.30		mg/kg	0.12	0.024	1
Anthracene	0.24		mg/kg	0.12	0.039	1
Pyrene	0.80		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.15		mg/kg	0.12	0.022	1
Chrysene	0.34		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.18		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.20		mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	0.13	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.32		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/11/22 09:26
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1721610-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	91		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1721610-2 WG1721610-3								
Naphthalene	82		76		40-140	8		50
Fluorene	86		80		40-140	7		50
Phenanthrene	78		75		40-140	4		50
Anthracene	82		77		40-140	6		50
Pyrene	87		83		35-142	5		50
Benzo(a)anthracene	85		80		40-140	6		50
Chrysene	83		79		40-140	5		50
Benzo(b)fluoranthene	92		86		40-140	7		50
Benzo(a)pyrene	93		86		40-140	8		50
Indeno(1,2,3-cd)pyrene	99		93		40-140	6		50
Benzo(ghi)perylene	86		81		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	117		23-120
2-Fluorobiphenyl	98		90		30-120
4-Terphenyl-d14	90		87		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	379		mg/kg	2.77	0.148	1	12/12/22 21:10	12/13/22 16:12	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	380		mg/kg	2.44	0.131	1	12/12/22 21:10	12/13/22 16:17	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	396		mg/kg	2.56	0.137	1	12/12/22 21:10	12/13/22 16:22	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	99.4		mg/kg	2.42	0.130	1	12/12/22 21:10	12/13/22 16:27	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	169		mg/kg	2.32	0.124	1	12/12/22 21:10	12/13/22 16:32	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1721903-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/12/22 21:10	12/13/22 13:50	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1721903-2 SRM Lot Number: D116-540								
Lead, Total	89		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1721903-3 QC Sample: L2269449-01 Client ID: MS Sample												
Lead, Total	1.99J	42.2	41.2	98		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1721903-4 QC Sample: L2269449-01 Client ID: DUP Sample						
Lead, Total	1.99J	3.41J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.6		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.4		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1722355-1 QC Sample: L2268495-01 Client ID: DUP Sample						
Solids, Total	90.8	84.1	%	8		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269475-01A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-01B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-01C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-01E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-01F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-02A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2269475-02B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260H(14),PA-8260HLW(14)
L2269475-02C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260H(14),PA-8260HLW(14)
L2269475-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-02E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-02F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-03A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-03B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-03C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-03E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-03F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-04A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-04B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-04C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-04E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269475-04F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-05A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-05B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-05C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-05E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-05F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/9/22

ALPHA Job #: L2269475

ALPHA ANALYTICAL — Customer Driven Science

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	SHORTLIST 1-6	Sample Specific Comments	TOTAL # BOTTLES
19475-01	GPR1101-01-5501	12/9	1000	S	TS	☒	☒	☒	☒		4
-02	GPR1101-02-5501		1040	S		☐	☒	☒	☒		2
-03	GPR1101-03-5501		1020	S		☐	☒	☒	☒		4
-04	GPR1101-04-5501		1030	S		☐	☒	☐	☒		2
-05	GPR1101-05-5501		1040	S		☐	☒	☒	☒		4
-06	TB-221209		-	W		☒	☐	☐	☐		2
-07	FB-221209		1100	W		☒	☒	☒	☒		4
						☐	☐	☐	☐		2
						☐	☐	☐	☐		4
						☐	☐	☐	☐		2

Container Type	G	G	G	-	-	-	-	-	-	-	-
Preservative	F	A	A	-	-	-	-	-	-	-	-

EMAIL 12/10/22 0140 — 12/10/22 0140

Relinquished By:	Date/Time	Received By:	Date/Time
	12/9 1508	AAL	12/9/22 1508
AAL	12/9/22 1800		12/9 1800
DMG	12.9 2100		12.9.22 2100

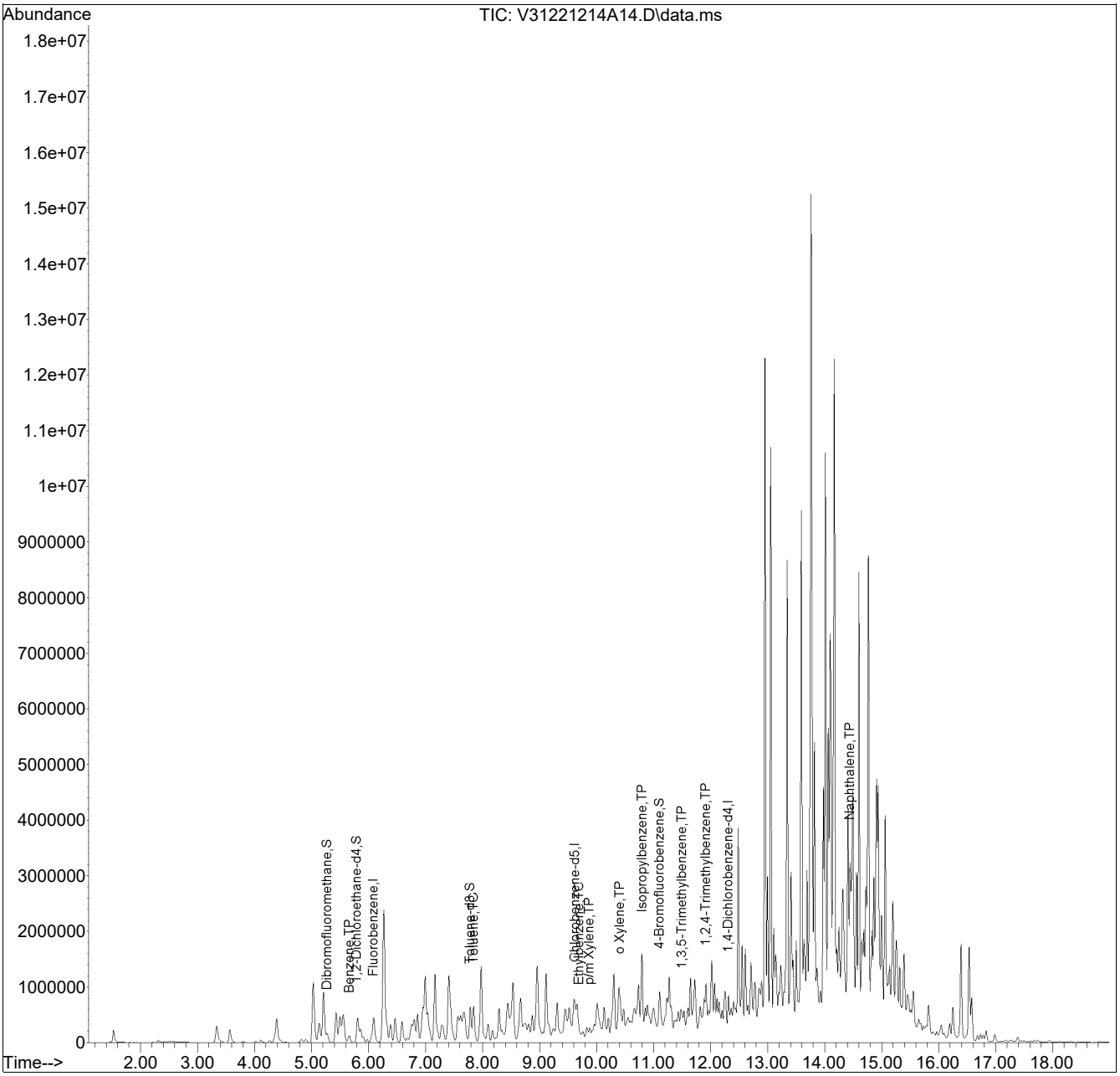
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A14.D
Acq On : 14 Dec 2022 12:54 pm
Operator : VOA131:JIC
Sample : L2269475-01,31H,4.99,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 14 13:48:04 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

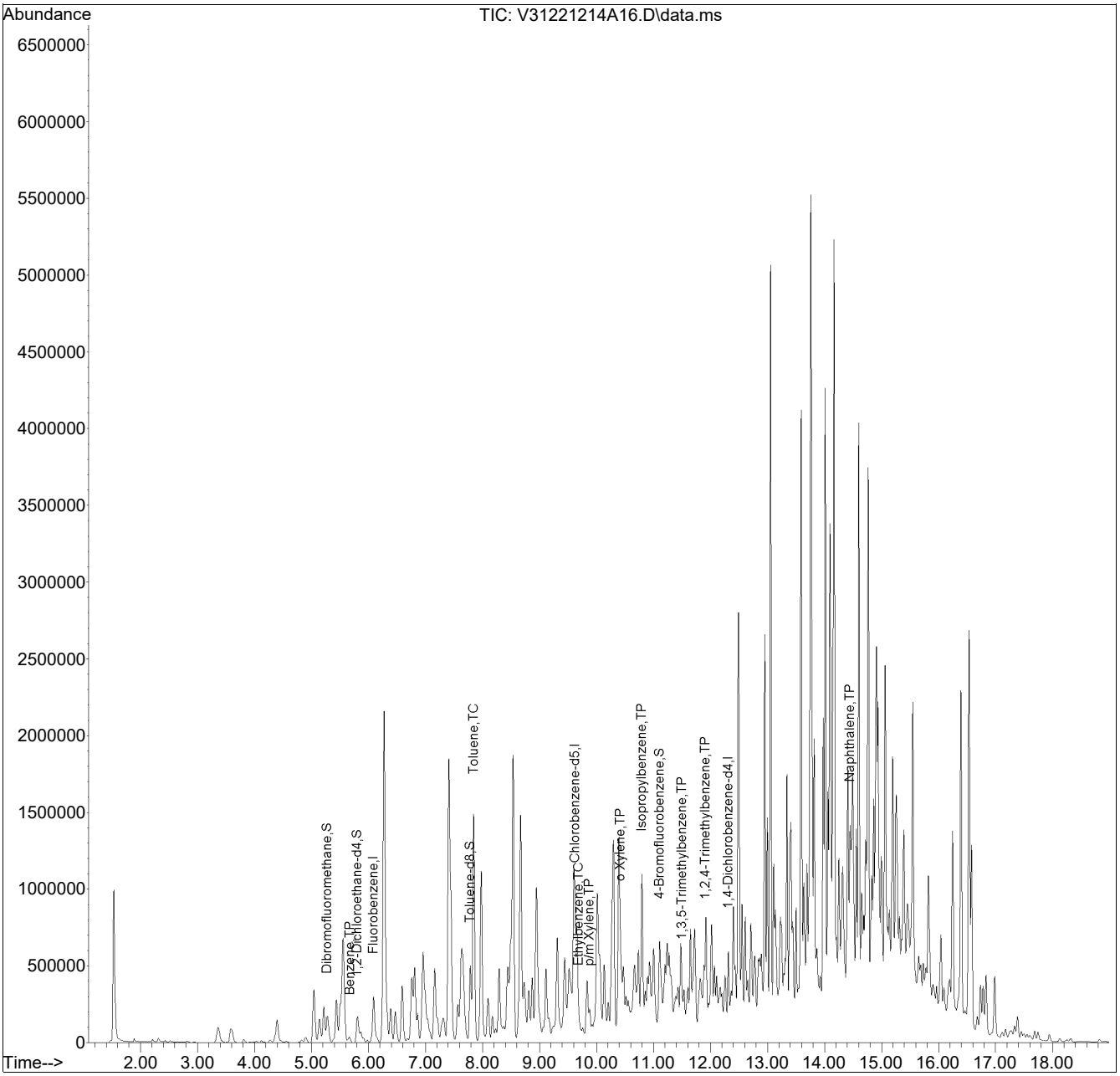


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A16.D
Acq On : 14 Dec 2022 01:40 pm
Operator : VOA131:AJK
Sample : L2269475-02,31,4.27,5,,C,R2F
Misc : WG1723589,ICAL19531
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 14 23:30:36 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

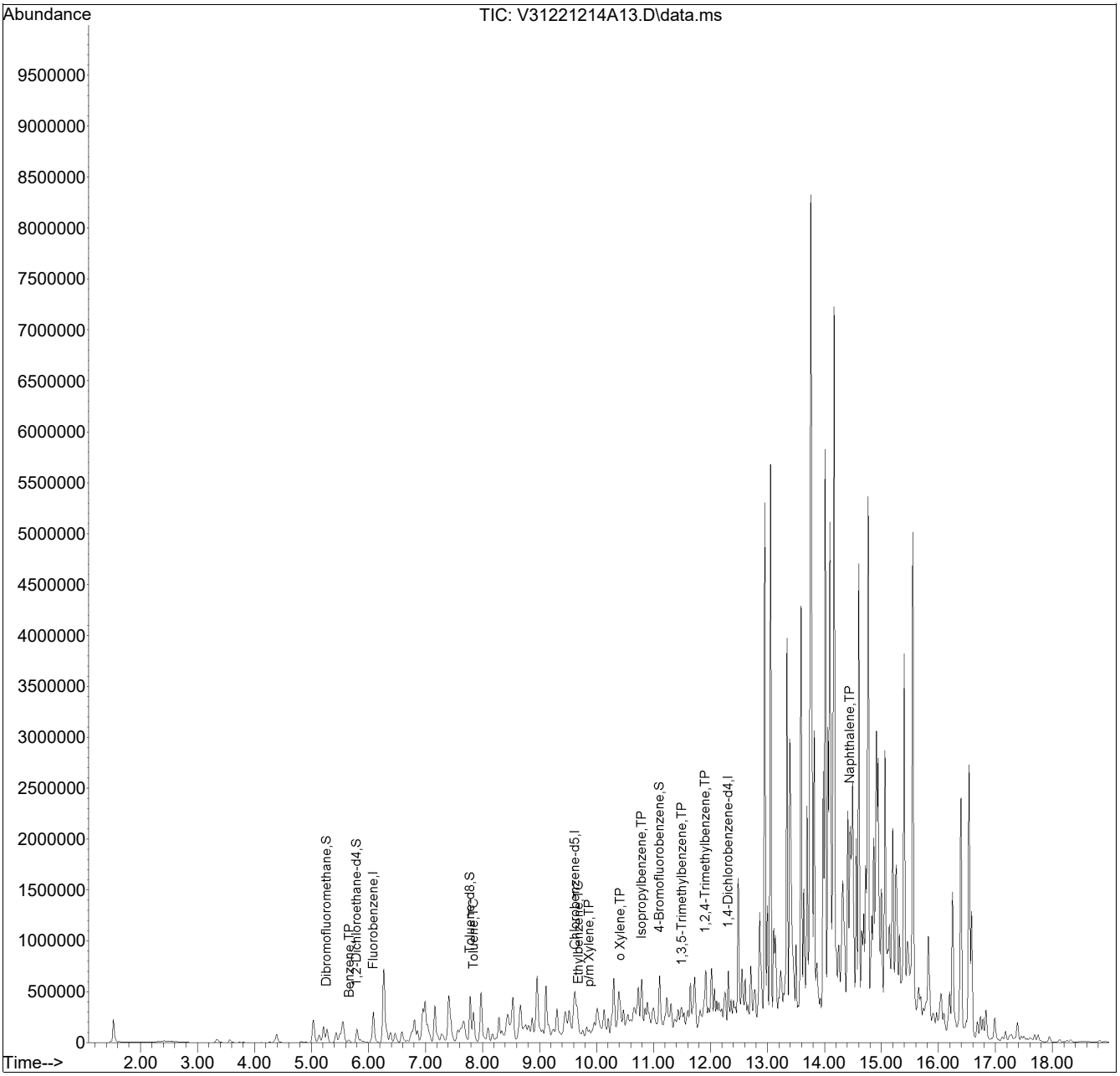


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A13.D
Acq On : 14 Dec 2022 12:31 pm
Operator : VOA131:JIC
Sample : L2269475-03,31H,4.18,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 14 13:28:01 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•



Bulk Product Movement, Scrap Log, and Waste Disposal Documentation (Tank Group 06)

052814 769349 91027 0091027-6A

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-6A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 91433	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 30360	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.iii (BENZENE)	CM	15.15	8T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225120			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry *to* its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On Behalf Of PES Belinda Spicer	Date: 9/13/20	Per: Luis Castro	Date: 9/14/20

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 10/4/20

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-6A

TO ---------- FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Kelly Lachey	Date: 10-4-22

[illegible]

ID [illegible]
GROSS 64260 lb INBOUND
12:11PM 10/04/2022

GROSS 64260 lb [illegible]
TARE 34140 lb
NET 30120 lb

NET 15.06 TON

01:59PM 10/04/2022

64260
34140
30120

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 769349

WEIGHED BY ______________________

105885 091027-6B 169358

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-6B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2189	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 71434	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 34240	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	17.12	8T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225170			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC on Behalf of	Carrier: CSX Railroad Corp	
Per: [signature] PES Representative	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if applicable to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 S. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials	
Per: Belinda Spicer	Date: 10/5/22	

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91027-6B

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10·5·22

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

0091027-6C

052169

Bill of Lading (Page 1 of 2)

769353

DOCUMENT # 91027-6C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049781 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tabs 71435	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 32700	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	16.35	8T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225315			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		RH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC on behalf of		Carrier: CSX Railroad Corp	
Per: Carrie Dumbodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if applicable to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dumbodeaux Date: 10-4-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-6C

TO — FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10-4-22

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

0091027-6D

1653814

Bill of Lading (Page 1 of 2)

769357

DOCUMENT # 91027-6D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tulso 91436	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS H0200	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	20.1	8T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225011			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		NOH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC On behalf of PES		Carrier: CSX Railroad Corp	
Per: Carrie Dunbodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dunbodeaux	Date: 10-5-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-6D

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Kelvin Lartigue JR	Date: 10-5-22

EPA-[illegible]

[illegible]

7392D
343320
39000

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

105204

00910827-6E

709360

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-6E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 71439	

38260

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9.III (BENZENE)	CM	19.13	8T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225145			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC On behalf of PES		Carrier: CSX Railroad Corp	
Per: Carrie Dubordeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubordeaux	Date: 10-5-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-6E

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per:	Date: 10-5-22	

E 111255H0

[illegible]

13700
35260
51340

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 108560

WEIGHED BY _____

0091027-6F 169350

105815

Bill of Lading (Page 1 of 2)

DOCUMENT # 91027-6F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70865	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241 Ticket 711438	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, (II) (BENZENE)	CM	21.35	8T
		PROFILE: 999843LA			
		IM CONTAINER# EPIU225343			
		RAIL CAR# EPIX91027			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On Behalf of PES Belinda Spicer	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Belinda Spicer Date: 10/4/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91027-8F

TO — FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10/4/22

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 163560

WEIGHED BY _____

091069-6A

769371

9/1069

Bill of Lading (Page 1 of 2)

DOCUMENT # 91069-6A

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 71442	

37100

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	18.55	ST
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225271			
		RAIL CAR# EPIX91089			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: Belinda Spicer	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 10/5/22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91069-BA

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc.	LA0000147272 (800) 336-2169
Acknowledgement of Receipt Per:	Date: 10/5/22

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

70780
84540
36440

RECEIVING TICKET # _____

WEIGHED BY _____

091089-6B

105863

Bill of Lading (Page 1 of 2)

769389

DOCUMENT # 91089-6B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 71443	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 30800	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	15.40	8T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225328			
		RAIL CAR# EPIX91089			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On behalf of PES Carrie Dumbodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations/as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dumbodeaux	Date: 10-6-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91069-6B

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Joseph Cox	Date: 10/6/2022

TICKET 00

TICKET 20
ID 653153
GROSS 65580 lb INBOUND
07:11AM 10/06/2022

[illegible] 65580 lb RECALLED
TARE 35520 lb
NET 30060 lb

NET 15.03 TN

07:[illegible]AM 10/06/2022

65580
35520
30060

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # [illegible]

WEIGHED BY ______________________

091069-6C

165379

Bill of Lading (Page 1 of 2)

769387

DOCUMENT # 91069-6C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tribus 71444	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 36,800	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III (BENZENE)	CM	18.40	8T
		PROFILE: 888843LA			
		IM CONTAINER# EPIU226358			
		RAIL CAR# EPIX91069			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On behalf of PES Carrie Dunbodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dunbodeaux	Date: 10-6-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91069-6C

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Kevin Lartigue JR	Date: 10-4-22

EPA 023530

[illegible]

13000
23920
39080

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76750

WEIGHED BY _____

091069-6D

065804

Bill of Lading (Page 1 of 2)

709374

DOCUMENT # 91069-6D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2189	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 71445	

39480

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	19.74	8T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225391			
		RAIL CAR# EPIX91069			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC on behalf-SF		Carrier: CSX Railroad Corp	
Per: Carrie Cembodeanx	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (E) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Cembodeanx Date: 10-5-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91068-6D

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10-5-22

EPW0055311

TICKET 38

TICKET 38

ID 653204
GROSS 73920 lb INBOUND --
01:29PM 10/05/2022
GROSS 73920 lb RECALLED
TARE 34940 lb
NET 38980 lb

NET 19.49 TON

01:05PM 10/05/2022

73920
34940
38980

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 38

WEIGHED BY _____

091069-6E

105814

Bill of Lading (Page 1 of 2)

709320

DOCUMENT # 91069-6E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 046791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1624

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Ticket 71446

SHIPPER'S INSTRUCTIONS

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	20.09	8T
		PROFILE: 969843LA			
		IM CONTAINER# EPIU225058			
		RAIL CAR# EPIX91069			
		ERG# 171 H039		NA	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On behalf of Carrie Rembodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if applicable to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9, Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Rembodeaux	Date: ~~10-4~~ 10-5-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91069-6E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt		
Per:	Date:	
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272	(800) 336-2169
Per: Kevin Lastrapes SR.	Date: 10-5-22	

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 76520

WEIGHED BY _____

0091069-6F

1063204

Bill of Lading (Page 1 of 2)

709378

DOCUMENT # 91069-6F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Tides 71447	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 38860	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	19.43	ST
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225186			
		RAIL CAR# EPIX91069			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC on behalf of PES		Carrier: CSX Railroad Corp	
Per: Carrie Dubodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials/Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (i)-(x) Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc Certification of receipt of materials

Per: Carrie Dubodeaux Date: 10-6-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91089-6F

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10-6-22

E 4114 23450
2516

[illegible]

10020
35100
25080

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 26131

WEIGHED BY _____

0053814

0001494-5A

91494

Bill of Lading (Page 1 of 2)

769405

DOCUMENT # 91494-5A

TO
Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

FROM
Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 048791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

ADDITIONAL INFORMATION
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241
Ticket 71407

SHIPPER'S INSTRUCTIONS

42640

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	21.32	8T
		PROFILE: 989843LA			
		IM CONTAINER# EPIU225217			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to Its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On behalf of Carrie Dumbodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dumbodeaux	Date: 10-6-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-SA

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Kevin Lentz Jr	Date: 10-4-22

(illegible)

TICKET #8

ID: 65334
FROM: TANK 19 TRENCH
07-SEP-22

FROM: TANK 19 TRENCH
TO: SHIP TO
QTY: 74000 LB

TIME: 20:30:48

SIGNATURE REQUIRED

74000
34000
40000

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 107405

WEIGHED BY _____

0582814 0091494-5B 769740

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-5B

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 088
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 71408	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 39400	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	19.7	8T
		PROFILE: 988843LA			
		IM CONTAINER# EPIU225141			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC	Carrier: CSX Railroad Corp	
Per: on behalf of PES Carrie Dubordeaux 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 8. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dubordeaux	Date: 11-3-22

Bill of Lading {Continuation Sheet) 2 of 2

DOCUMENT# 91494-5B

TO — FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: X [signature]	Date: 11-3-22

E-PM-22514

73430
34420
38000

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

091494-5C

1053204

Bill of Lading (Page 1 of 2)

709409

DOCUMENT # 91494-5C

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241	
Ticket 71409	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 39400	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	19.7	ST
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225193			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC On behalf of PES		Carrier: CSX Railroad Corp	
Per: Carrie Dembodeaux	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dembodeaux	Date: 10-7-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-5C

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date: 10-7-22

NW040
35080
409100

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 109109

WEIGHED BY _____

091494-5D

1052314

Bill of Lading (Page 1 of 2)

769408

DOCUMENT # 91494-5D

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2189	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/a/ 1241	
Ticket 71410	

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 36240	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.(II (BENZENE)	CM	13.12	8T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225307			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC	Carrier: CSX Railroad Corp
Per: On behalf of PES Carrie Dumbodeaux Date: 9/13	Per: Luis Castro Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dumbodeaux Date: 10-7-22	

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-5D

TO — FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 088
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: Kevin Lorbiecki SR	Date: 10-7-22

5/19/20
33960
33960

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # _____

WEIGHED BY _____

SR# 71411 Cwmi

Please print or type. Rt 76 9715 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	PAD049791098	1	(800)424-9300	022754120 JJK

GENERATOR

5. Generator's Name and Mailing Address
PHILADELPHIA ENERGY SOLUTIONS
3144 PASSYUNK AVE
PHILADELPHIA PA 19145
Generator's Phone: (440)228-1524

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
CHEMICAL WASTE MANAGEMENT,INC.

U.S. EPA ID Number
LA0000147272

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT INC
7170 JOHN BRANNON RD
SULPHUR LA 70665

U.S. EPA ID Number
LAD000777201

Facility's Phone: (337)583-2169

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3077, HAZARDOUS WASTE, SOLID, N.O.S.,9, III, (K171) LA957146	1	CM	22 2244	T	K171
	2.	CH				
	3.					
	4.					

14. Special Handling Instructions and Additional Information
ERG# 171
IN CASE OF EMERGENCY CONTACT CHEMTREC 800-424-9300 (WM CONTRACT #CCN24117)
DISCREPANCIES CONTACT: ( )
REMANIFEST FROM BOL# 91494-5E/769715

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Pandora Nunez for Patrick Pharris
Signature: Pandora Nunez
Month 9 Day 14 Year 22

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jeremy Reje
Signature:
Month 11 Day 2 Year 22

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Belinda Spicer
Signature: BSpicer
Month 11 Day 2 Year 22

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

1623814

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-5E

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION

VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/al 1241

Tulsa 7411

SHIPPER'S INSTRUCTIONS

Remit to: 0227547 DOT JSK 11/10/22

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS 44880	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9.III (BENZENE)	CM	22.44	6T
		PROFILE: 988843LA			
		IM CONTAINER# EPIU225321			
		RAIL CAR# EPIX91494			
				NH	
		ERG# 171 H039			

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC		Carrier: CSX Railroad Corp	
Per: On Behalf of PES Belinda Spicer	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations, Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Belinda Spicer	Date: 11/2/22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-5E

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per: [signature]	Date: 11-2-22

EPA-22-21

TRUCK 36
TICKET 36

ID 60570
GROSS 77060 lb INBOUND
09:20AM 11/02/2022

GROSS 77060 lb RECALLED
TARE 33900 lb
NET 43160 lb

NET 21.58 Ton

09:09PM 11/02/2022

77060
33900
43160

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 168715

WEIGHED BY _____

091494-5F

109400

Bill of Lading (Page 1 of 2)

DOCUMENT # 91494-5F

TO	FROM
Consignee: CHEMICAL WASTE MANAGEMENT INC	Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 7170 JOHN BRANNON ROAD	Street: 3144 PASSYUNKAVE
EPA ID: LAD000777201	EPA ID: PAD 049791 098
City/State/Zip: SULPHUR LA 70665	City/State/Zip: PHILADELPHIA, PA 19145
Phone: (337) 583-2169	Phone: (440) 228-1524

ADDITIONAL INFORMATION	SHIPPER'S INSTRUCTIONS
VRE TANK BOTTOMS EXCLUDED FROM THE DEFINITION OF SOLID WASTE UNDER 40CFR 261.4/at 1241	
Ticket 91412	

32360

HAZARDOUS MATERIAL	NO. SHIPPING UNITS	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	Type	Volume	UOM
X	1	RQ, UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE. SOLID. N.O.S. 9. III (BENZENE)	CM	16.28	8T
		PROFILE: 869843LA			
		IM CONTAINER# EPIU225358			
		RAIL CAR# EPIX91494			
		ERG# 171 H039		NH	

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bills of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC on behalf of PES	Carrier: CSX Railroad Corp	
Per: [signature]	Date: 9/13/22	Per: Luis Castro	Date: 9/14/22

Mark with "X" or "RQ" if appropriate to designate Hazardous Materials Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (iii) of Title 4 9. Code of Federal Regulations. Also, when shipping hazardous materials, the shipper's certification statement prescribed in section 172.204(a) of the Federal Regulations, as indicated on the Bill of Lading does apply, unless a specific exception from the requirement is provided in the Regulation for a particular material.

Designated Consignee: Chemical Waste Management, Inc	Certification of receipt of materials
Per: Carrie Dunbodeaux	Date: 10-6-22

Bill of Lading (Continuation Sheet) 2 of 2

DOCUMENT# 91494-5F

TO ——— FROM

Consignee: CHEMICAL WASTE MANAGEMENT INC
Street: 7170 JOHN BRANNON ROAD
EPA ID: LAD000777201
City/State/Zip: SULPHUR LA 70665
Phone: (337) 583-2169

Shipper: PHILADELPHIA ENERGY SOLUTIONS R&M LLC
Street: 3144 PASSYUNKAVE
EPA ID: PAD 049791 098
City/State/Zip: PHILADELPHIA, PA 19145
Phone: (440) 228-1524

Carrier 2: BNSF Railway Company Acknowledgement of Receipt	
Per:	Date:
Carrier 3: Chemical Waste Management, Inc. Acknowledgement of Receipt	LA0000147272 (800) 336-2169
Per:	Date:

[illegible]

CHEMICAL WASTE MANAGEMENT, INC.
7170 JOHN BRANNON ROAD
SULPHUR, LA 70665

RECEIVING TICKET # 709400

WEIGHED BY _____

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5120	Tank 272	58,440	28,150	**15.15**	**15.06**	91027	A	**-8.9**
5170	Tank 272	62,380	38,150	**12.12**	**16.85**	91027	B	**-11.9**
5315	Tank 272	62,640	28,150	**17.25**	**16.34**	91027	C	**-6.8**
5011	Tank 272	68,500	28,300	**20.10**	**19.80**	91027	D	**-3.9**
5145	Tank 272	66,500	28,250	**19.13**	**18.67**	91027	E	**-4.9**
5343	Tank 272	70,850	28,150	**21.35**	**21.24**	91027	F	**-2.7**
5271	Tank 272	65,240	28,150	**18.55**	18.22	91069	A	**-5.5**
5328	Tank 272	61,800	28,150	**16.83**	15.03	91069	B	**-7.2**
5358	Tank 272	67,800	28,150	**19.83**	19.54	91069	C	**-4.2**
5391	Tank 272	67,620	28,150	**19.74**	19.49	91069	D	**-4.3**
5058	Tank 272	68,320	28,150	**20.09**	19.76	91069	E	**-3.9**
5186	Tank 272	67,000	28,150	**19.43**	17.46	91069	F	**-4.6**
5217	Tank 272	70,780	28,150	**21.32**	20.00	91494	A	**-2.7**
5141	Tank 272	70,400	28,150	**21.13**	19.00	91494	B	**-2.9**
5193	Tank 272	70,500	28,150	**21.18**	20.48	91494	C	**-2.8**
5307	Tank 272	54,380	28,150	**13.12**	11.98	91494	D	**-10.9**
5321	Tank 272	73,020	28,150	**22.44**	21.58	91494	E	**-1.6**
5356	Tank 272	60,700	28,150	**16.28**	15.45	91494	F	**-7.7**
				334.96	**325.95**			**-97**
		Running Total (tons)		**19,144.88**	**19,128.20**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5284	Tank 272	79,340	37,600	**20.87**		91405	A	**-3.1**
5281	Tank 272	76,460	37,600	**19.43**		91405	B	**-4.6**
5248	Tank 272	75,720	37,600	**19.06**		91405	C	**-4.9**
5154	Tank 272	71,220	37,600	**16.81**		91405	D	**-7.2**
5308	Tank 272	80,060	37,600	**21.23**		91405	E	**-2.8**
5019	Tank 272	76,980	37,600	**19.69**		91405	F	**-4.3**
				117.09	**0.00**			**-27**
		Running Total (tons)		**19,261.97**	**19,128.20**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5320	Tank 273	69,740	31,560	**19.09**		91040	A	**-4.9**
5019	Tank 273	71,060	31,560	**19.75**		91040	B	**-4.3**
5236	Tank 273	70,220	31,560	**19.33**		91040	C	**-4.7**
4532	Tank 273	70,500	31,560	**19.47**		91040	D	**-4.5**
5248	Tank 273	70,800	31,560	**19.62**		91040	E	**-4.4**
5295	Tank 273	69,960	31,560	**19.20**		91040	F	**-4.8**
5281	Tank 273	69,780	31,560	**19.11**		91405	A	**-4.9**
5284	Tank 273	71,800	31,560	**20.12**		91405	B	**-3.9**
5308	Tank 273	69,960	31,560	**19.20**		91405	C	**-4.8**
4683	Tank 273	70,520	31,560	**19.48**		91405	D	**-4.5**
4253	Tank 273	70,980	31,560	**19.71**		91405	E	**-4.3**
5154	Tank 273	71,220	31,560	**19.83**		91405	F	**-4.2**
				233.91				**-54**
		Running Total (tons)		**20,552.19**	**18,802.25**			

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4850	Tank 273	67,760	31,560	**18.10**		91133	A	**-5.9**
5279	Tank 273	69,580	31,560	**19.01**		91133	B	**-5.0**
4613	Tank 273	70,120	31,560	**19.28**		91133	C	**-4.7**
5042	Tank 273	69,880	31,560	**19.16**		91133	D	**-4.8**
5307	Tank 273	68,900	31,560	**18.67**		91133	E	**-5.3**
4608	Tank 273	70,460	31,560	**19.45**		91133	F	**-4.6**
4856	Tank 273	70,820	31,560	**19.63**		91090	A	**-4.4**
4893	Tank 273	71,100	31,560	**19.77**		91090	B	**-4.2**
5356	Tank 273	69,020	31,560	**18.73**		91090	C	**-5.3**
5369	Tank 273	68,820	31,560	**18.63**		91090	D	**-5.4**
4620	Tank 273	71,580	31,560	**20.01**		91090	E	**-4.0**
4568	Tank 273	70,500	31,560	**19.47**		91090	F	**-4.5**
5196	Tank 273	68,300	31,560	**18.37**		91494	A	**-5.6**
5319	Tank 273	70,660	31,560	**19.55**		91494	B	**-4.5**
5374	Tank 273	68,990	31,560	**18.72**		91494	C	**-5.3**
5246	Tank 273	69,500	31,560	**18.97**		91494	D	**-5.0**
5267	Tank 273	70,940	31,560	**19.69**		91494	E	**-4.3**
4713	Tank 273	70,300	31,560	**19.37**		91494	F	**-4.6**
5141	Tank 273	71,760	31,560	**20.10**		HKRX80023	A	**-3.9**
4650	Tank 273	71,760	31,560	**20.10**		HKRX80023	B	**-3.9**
5327	Tank 273	69,820	31,560	**19.13**		HKRX80023	C	**-4.9**
5217	Tank 273	70,360	31,560	**19.40**		HKRX80023	D	**-4.6**
4849	Tank 273	72,080	31,560	**20.26**		HKRX80023	E	**-3.7**
4680	Tank 273	71,680	31,560	**20.06**		HKRX80023	F	**-3.9**
				463.63				**-112**
		Running Total (tons)		**21,015.82**				

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4557	Tank 273	69,900	31,980	**18.96**		EPIX91032	A	**-5.0**
4737	Tank 273	69,800	31,700	**19.05**		EPIX91032	B	**-5.0**
4606	Tank 273	67,320	31,980	**17.67**		EPIX91032	C	**-6.3**
4800	Tank 273	69,160	31,700	**18.73**		EPIX91032	D	**-5.3**
4554	Tank 273	70,680	31,700	**19.49**		EPIX91032	E	**-4.5**
4401	Tank 273	68,980	31,980	**18.50**		EPIX91032	F	**-5.5**
4615	Tank 273	69,440	31,980	**18.73**		EPIX91429	A	**-5.3**
4484	Tank 273	71,440	31,700	**19.87**		EPIX91429	B	**-4.1**
4230	Tank 273	71,280	31,980	**19.65**		EPIX91429	C	**-4.4**
4678	Tank 273	71,280	31,700	**19.79**		EPIX91429	D	**-4.2**
4576	Tank 273	71,980	31,980	**20.00**		EPIX91429	E	**-4.0**
5132	Tank 273	70,320	31,700	**19.31**		EPIX91429	F	**-4.7**
4721	Tank 273	72,260	31,700	**20.28**		EPIX91086	A	**-3.7**
4654	Tank 273	72,500	31,700	**20.40**		EPIX91086	B	**-3.6**
4587	Tank 273	71,260	31,980	**19.64**		EPIX91086	C	**-4.4**
4389	Tank 273	71,800	31,700	**20.05**		EPIX91086	D	**-4.0**
4738	Tank 273	73,120	31,980	**20.57**		EPIX91086	E	**-3.4**
4556	Tank 273	69,660	31,980	**18.84**		EPIX91086	F	**-5.2**
4717	Tank 273	71,180	31,700	**19.74**		EPIX91419	A	**-4.3**
4633	Tank 273	71,100	31,700	**19.70**		EPIX91419	B	**-4.3**
4647	Tank 273	72,020	31,700	**20.16**		EPIX91419	C	**-3.8**
4697	Tank 273	71,240	31,700	**19.77**		EPIX91419	D	**-4.2**
4538	Tank 273	71,760	31,980	**19.89**		EPIX91419	E	**-4.1**
4749	Tank 273	70,720	31,980	**19.37**		EPIX91419	F	**-4.6**
4537	Tank 273	71,460	31,700	**19.88**		EPIX91484	A	**-4.1**
4534	Tank 273	72,010	31,700	**20.16**		EPIX91484	B	**-3.8**
4693	Tank 273	72,020	31,700	**20.16**		EPIX91484	C	**-3.8**
4544	Tank 273	71,560	31,700	**19.93**		EPIX91484	D	**-4.1**
4618	Tank 273	72,880	31,980	**20.45**		EPIX91484	E	**-3.6**
4767	Tank 273	69,980	31,980	**19.00**		EPIX91484	F	**-5.0**
4427	Tank 273	69,940	31,980	**18.98**		EPIX91513	A	**-5.0**
4429	Tank 273	73,420	31,980	**20.72**		EPIX91513	B	**-3.3**
5300	Tank 273	70,720	31,980	**19.37**		EPIX91513	C	**-4.6**
5134	Tank 273	71,100	31,700	**19.70**		EPIX91513	D	**-4.3**
4226	Tank 273	72,040	31,700	**20.17**		EPIX91513	E	**-3.8**
4790	Tank 273	69,840	31,700	**19.07**		EPIX91513	F	**-4.9**
5224	Tank 273	70,140	31,980	**19.08**		EPIX91451	A	**-4.9**
4344	Tank 273	71,560	31,980	**19.79**		EPIX91451	B	**-4.2**
5368	Tank 273	69,740	31,700	**19.02**		EPIX91451	C	**-5.0**
4038	Tank 273	71,500	31,700	**19.90**		EPIX91451	D	**-4.1**
4786	Tank 273	70,100	31,700	**19.20**		EPIX91451	E	**-4.8**
4716	Tank 273	70,580	31,700	**19.44**		EPIX91451	F	**-4.6**
				822.18				**-186**
		Running Total (tons)		**21,374.37**				

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4258	Tank 273	71,760	31,540	**20.11**		EPIX91448	A	**-3.9**
4592	Tank 273	71,860	31,540	**20.16**		EPIX91448	B	**-3.8**
4681	Tank 273	71,860	31,540	**20.16**		EPIX91448	C	**-3.8**
4748	Tank 273	71,560	31,540	**20.01**		EPIX91448	D	**-4.0**
4012	Tank 273	72,300	31,540	**20.38**		EPIX91448	E	**-3.6**
4448	Tank 273	72,220	31,540	**20.34**		EPIX91448	F	**-3.7**
4869	Tank 273	70,840	31,540	**19.65**		EPIX91089	A	**-4.4**
5321	Tank 273	68,840	28,400	**20.22**		EPIX91089	B	**-3.8**
4890	Tank 273	72,220	31,540	**20.34**		EPIX91089	C	**-3.7**
4710	Tank 273	71,700	31,540	**20.08**		EPIX91089	D	**-3.9**
4858	Tank 273	71,860	31,540	**20.16**		EPIX91089	E	**-3.8**
4659	Tank 273	71,400	31,540	**19.93**		EPIX91089	F	**-4.1**
4688	Tank 273	70,900	31,540	**19.68**		EPIX91085	A	**-4.3**
4305	Tank 273	72,080	31,540	**20.27**		EPIX91085	B	**-3.7**
4702	Tank 273	71,800	31,540	**20.13**		EPIX91085	C	**-3.9**
4769	Tank 273	71,240	31,540	**19.85**		EPIX91085	D	**-4.2**
4581	Tank 273	72,150	31,540	**20.31**		EPIX91085	E	**-3.7**
4663	Tank 273	70,460	31,540	**19.46**		EPIX91085	F	**-4.5**
				361.24				**-71**
		Running Total (tons)		**21,735.60**				

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4822	Tank 273	72,040	31,540	**20.25**		EPIX91035	A	**-3.8**
4734	Tank 273	72,340	31,540	**20.40**		EPIX91035	B	**-3.6**
4818	Tank 273	71,860	31,540	**20.16**		EPIX91035	C	**-3.8**
4583	Tank 273	71,300	31,540	**19.88**		EPIX91035	D	**-4.1**
5179	Tank 273	72,100	31,540	**20.28**		EPIX91035	E	**-3.7**
4807	Tank 273	76,140	31,540	**22.30**		EPIX91035	F	**-1.7**
4876	Tank 273	71,200	31,540	**19.83**		EPIX91449	A	**-4.2**
4792	Tank 273	72,180	31,540	**20.32**		EPIX91449	B	**-3.7**
4719	Tank 273	69,980	31,540	**19.22**		EPIX91449	C	**-4.8**
4707	Tank 273	71,360	31,540	**19.91**		EPIX91449	D	**-4.1**
4465	Tank 273	70,880	31,540	**19.67**		EPIX91449	E	**-4.3**
4832	Tank 273	69,580	31,540	**19.02**		EPIX91449	F	**-5.0**
				241.24				**-47**
		Running Total (tons)		**21,976.84**				

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
4689	Tank 273	69,620	31,540	**19.04**		EPIX91519	A	**-5.0**
4882	Tank 273	72,780	32,060	**20.36**		EPIX91519	B	**-3.6**
4781	Tank 273	68,640	31,540	**18.55**		EPIX91519	C	**-5.5**
4828	Tank 273	66,600	31,540	**17.53**		EPIX91519	D	**-6.5**
4639	Tank 273	72,440	32,060	**20.19**		EPIX91519	E	**-3.8**
5365	Tank 273	71,560	31,860	**19.85**		EPIX91519	F	**-4.2**
4479	Tank 273	70,400	31,540	**19.43**		EPIX91480	A	**-4.6**
4348	Tank 273	72,020	31,540	**20.24**		EPIX91480	B	**-3.8**
4789	Tank 273	64,420	32,060	**16.18**		EPIX91480	C	**-7.8**
4605	Tank 273	65,140	31,540	**16.80**		EPIX91480	F	**-7.2**
5193	Tank 273	71,900	31,560	**20.17**		EPIX91480	E	**-3.8**
4887	Tank 273	70,820	31,540	**19.64**		EPIX91480	F	**-4.4**
				227.98				**-60**
		Running Total (tons)		**22,204.82**				

		Weight						
Container #	Origin of Waste	Gross	Tare	*Net*	*Facility Net*	Rail Car #	Railcar Position	*Over/Under*
5042	2-Sep	69,860	31,540	**19.16**		EPIX91133	A	**-4.8**
5279	2-Sep	70,740	31,540	**19.60**		EPIX91133	B	**-4.4**
4608	2-Sep	68,540	31,540	**18.50**		EPIX91133	C	**-5.5**
4613	Tank 273	68,960	31,540	**18.71**		EPIX91133	D	**-5.3**
5307	2-Sep	71,820	31,540	**20.14**		EPIX91133	E	**-3.9**
4778	Tank 273	70,160	31,540	**19.31**		EPIX91133	F	**-4.7**
				115.42				**-29**
		Running Total (tons)		**22,092.26**				

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	09.08.2022	08086-09001		2286	4283		TT	22951	78720	29760	48,960	6,739.16	160.46			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0942 HRS		
2	09.08.2022	08086-09002		2550	4290		TT	22962	77780	30040	47,740	6,571.23	156.46	96,700		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1103 HRS		
3	09.09.2022	08086-09003		2286	4283		TT	22982	80600	29760	50,840	6,997.94	166.62			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1055 HRS		
4	09.09.2022	08086-09004		2550	4290		TT	22992	73780	30040	43,740	6,020.65	143.35	94,580	191,280	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1316 HRS		
5	09.16.2022	08086-09005		2286	4290		TT	23141	75460	29700	45,760	6,298.69	149.97			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0707 HRS		
6	09.16.2022	08086-09006		2286	4290		TT	23155	75700	29700	46,000	6,331.73	150.76	91,760	91,760	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0947 HRS		
7	09.29.2022	08086-09007		2286	4290		TT	23319	75660	29700	45,960	6,326.22	150.62	45,960	45,960	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0853 HRS		
										Totals to Date	329,000	45,285.62	1,078.23	329,000	329,000						

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	10.06.2022	08086-09008		2286	4290		TT	23459	74420	29700	44,720	6,155.54	146.56			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0640 HRS		
2	10.06.2022	08086-09009		2286	4283		TT	23468	74460	29700	44,760	6,161.05	146.69	89,480	89,480	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0917 HRS		
3	10.13.2022	08086-09010		2286	4290		TT	23600	74920	29700	45,220	6,224.36	148.20			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0650 HRS		
4	10.13.2022	08086-09011		2286	4283		TT	23601	73880	29760	44,120	6,072.95	144.59	89,340	89,340	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0913 HRS		
5	10.20.2022	08086-09012		2286	4283		TT	23763	82800	29760	53,040	7,300.76	173.83			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0651 HRS		
6	10.20.2022	08086-09013		2286	4290		TT	23777	76740	29700	47,040	6,474.88	154.16	100,080	100,080	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0917 HRS		
7	10.26.2022	08086-09014		2286	4290		TT	23893	75500	29700	45,800	6,304.20	150.10			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0646 HRS		
8	10.26.2022	08086-09015		2286	4283		TT	23899	84480	29760	54,720	7,532.00	179.33			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0908 HRS		
9	10.26.2022	08086-09016		2286	4290		TT	23908	77620	29700	47,920	6,596.01	157.05	148,440		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1139 HRS		
10	10.27.2022	08086-09017		1983	4283		TT	23923	72940	29700	43,240	5,951.82	141.71	43,240		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1051 HRS		
11	10.28.2022	08086-09018		2286	4284		TT	23935	76640	29700	46,940	6,461.11	153.84			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0826 HRS		
12	10.28.2022	08086-09019		2286	4290		TT	23939	76340	29700	46,640	6,419.82	152.85	93,580	285,260	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1055 HRS		
										Totals to Date	564,160	77,654.51	1,848.92	564,160	564,160							

Load #	Date	Origin	BOL #	Truck #	Container Type	Ticket #	Gross	Tare	Net	Invoice #	Comments	Monthly Total (ton)
1	11/16/2022	272	11162022-1	3227	Vac Truck	24230	51520	31160	20360	SRS2684		
2	11/16/2022	272	11162022-2	3227	Vac Truck	24232	49140	31160	17980	SRS2684		
3	11/16/2022	272	11162022-3	3227	Vac Truck	24238	52420	31160	21260	SRS2684		
4	11/18/2022	272	11162022-4	3227	Vac Truck	24264	53060	31160	21900	SRS2685		
5	11/18/2022	272	11162022-5	3227	Vac Truck	24268	53060	31160	21900	SRS2685		
6	11/18/2022	272	11162022-6	3227	Vac Truck	24269	54100	31160	22940	SRS2685		
7	11/18/2022	272	11162022-7	3227	Vac Truck	24271	53820	31160	22660	SRS2685		
8	11/22/2022	272	11162022-8	3227	Vac Truck	24275	52200	31160	21040	SRS2686		
9	11/22/2022	272	11162022-9	3227	Vac Truck	24304	52640	31160	21480	SRS2686		
10	11/22/2022	272	11162022-10	3227	Vac Truck	24310	53380	31160	22220	SRS2686		
11	11/22/2022	272	11162022-11	3227	Vac Truck	24314	52760	31160	21600	SRS2686		
12	11/23/2022	272	11162022-12	3227	Vac Truck	24317	51580	31160	20420	SRS2687		
13	11/23/2022	272	11162022-13	3227	Vac Truck	24318	53060	31160	21900	SRS2687		
14	11/23/2022	272	11162022-14	3227	Vac Truck	24319	53040	31160	21880	SRS2687		
15	11/23/2022	272	11162022-15	3227	Vac Truck	24320	52420	31160	21260	SRS2687	November Total	160.4
16												
17												
18												
19												
20												
21												

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	11.09.2022	08086-09020		2286	4284		TT	24117	75580	29700	45,880	6,315.21	150.36	45,880		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1524 HRS		
2	11.10.2022	08086-09021		2286	4290		TT	24141	77260	29700	47,560	6,546.46	155.87	47,560	93,440	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0806 HRS		
3	11.16.2022	08086-09022		1984	4284		TT	24236	83880	27900	55,980	7,705.44	183.46	55,980	55,980	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1227 HRS		
										Totals to Date	149,420	20,567.10	489.69	149,420	149,420							

Load #	Date	Origin	BOL #	Truck #	Container Type	Ticket #	Gross	Tare	Net	Invoice	Comments	Monthly Total (ton)
1	12/1/2022	272	11162022-16	3227	Vac Truck	24361	52020	31160	20860	SRS2688		
2	12/1/2022	272	11162022-17	3227	Vac Truck	24375	53320	31160	22160	SRS2688		
3	12/1/2022	272	11162022-18	3227	Vac Truck	24381	52440	31160	21280	SRS2688		
4	12/1/2022	272	11162022-19	3227	Vac Truck	24384	52480	31160	21320	SRS2688		
5	12/2/2022	272	11162022-20	3227	Vac Truck	24391	50400	31160	19240	SRS2697		
6	12/2/2022	272	11162022-21	3227	Vac Truck	24400	52040	31160	20880	SRS2697		
7	12/2/2022	272	11162022-22	3227	Vac Truck	24403	51960	31160	20800	SRS2697		
8	12/2/2022	272	11162022-23	3227	Vac Truck	24406	52860	31160	21700	SRS2697		
9	12/12/2022	272	11162022-24	3227	Vac Truck	24407	51340	31160	20180	SRS2698		
10	12/12/2022	272	11162022-25	3227	Vac Truck	24459	51600	31160	20440	SRS2698		
11	12/12/2022	272	11162022-26	3227	Vac Truck	24462	51900	31160	20740	SRS2698		
12	12/12/2022	272	11162022-27	3227	Vac Truck	24473	53540	31160	22380	SRS2698		
13	12/13/2022	272	11162022-28	3227	Vac Truck	24476	51840	31160	20680	SRS2699		
14	12/13/2022	272	11162022-29	3227	Vac Truck	24481	51980	31160	20820	SRS2699		
15	12/13/2022	272	11162022-30	3227	Vac Truck	24482	50780	31160	19620	SRS2699		
16	12/13/2022	272	11162022-31	3227	Vac Truck	24489	51160	31160	20000	SRS2699		
17	12/16/2022	272	11162022-32	3227	Vac Truck	24524	51500	31160	20340	SRS2700		
18	12/16/2022	272	11162022-33	3227	Vac Truck	24525	53180	31160	22020	SRS2700		
19	12/16/2022	272	11162022-34	3227	Vac Truck	24527	52740	31160	21580	SRS2700		
20	12/16/2022	272	11162022-35	3227	Vac Truck	24528	53380	31160	22220	SRS2700		
21	12/20/2022	272	11162022-36	327	Vac Truck	24543	51800	31160	20640	SRS2701		
22	12/20/2022	272	11162022-37	327	Vac Truck	24546	53200	31160	22040	SRS2701		
23	12/20/2022	272	11162022-38	327	Vac Truck	24548	52520	31160	21360	SRS2701		
24	12/20/2022	272	11162022-39	327	Vac Truck	24552	52020	31160	20860	SRS2701		
25	12/23/2022	272	11162022-40	327	Vac Truck	24574	49800	31160	18640	SRS2703		
26	12/29/2022	272	11162022-41	327	Vac Truck	24575	51620	31160	20460	SRS2703		
27	12/29/2022	272	11162022-42	327	Vac Truck	24576	51400	31160	20240	SRS2703		
28	12/29/2022	272	11162022-43	327	Vac Truck	24577	50460	31160	19300	SRS2703		
29									582800			291.4
30												

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	12.01.2022	08086-09023	SRS2689	2286	4290		TT	24374	79220	29700	49,520	6,816.24	162.29			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0855 HRS		
2	12.01.2022	08086-09024	SRS2689	2286	4284		TT	24378	83120	29700	53,420	7,353.06	175.07	102,940	102,940	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0956 HRS		
										Totals to Date	102,940	14,169.30	337.36	102,940	102,940							

Load #	Date	Origin	BOL #	Truck #	ontainer Ty	Ticket #	Gross	Tare	Net		Comments	nthly Total (ton)
1	1/23/2023	272	11162022-44	3227	Vac Truck	24635	50020	31160	18860			
2												

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	01.13.2023	08086-09025	SRS2713	2286	4290		TT	24712	83340	29700	53,640	7,383.34	175.79	53,640	53,640	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1050 HRS		
2	01.17.2023	08086-09026	SRS2713	2286	4284		TT	24720	77620	29700	47,920	6,596.01	157.05	47,920		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0650 HRS		MATERIAL FROM TANK 281
3	01.20.2023	08086-09027	SRS2713	2286	4290		TT	24754	89300	29700	59,600	8,203.72	195.33	59,600	107,520	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0556 HRS		MATERIAL FROM TANK 281
4	01.26.2023	08086-09027-1	SRS2713	2286	4289		TT	24785	86660	27900	58,760	8,088.09	192.57			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0700 HRS		
5	01.26.2023	08086-09028	SRS2713	2286	4290		TT	24793	81020	29700	51,320	7,064.01	168.19	110,080	110,080	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0900 HRS		
										Totals to Date	271,240	37,335.17	888.93	271,240	271,240						

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	02.28.2023	08086-09029	SRS2722	1983	4289		TT	25100	74860	27900	46,960	6,463.87	153.90			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0920 HRS		
2	02.28.2023	08086-09030	SRS2722	1983	4290		TT	25101	67060	27900	39,160	5,390.23	128.34	86,120	86,120	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1325 HRS		
										Totals to Date	86,120	11,854.09	282.24	86,120	86,120						

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	Additional Comments
1	03.02.2023	08086-09031	SRS2722	2286	4289		TT	25129	81480	27900	53,580	7,375.09	175.60	53,580		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1150 HRS		
2	03.03.2023	08086-09032	SRS2722	2286	4290		TT	25138	85040	29700	55,340	7,617.34	181.37	55,340	108,920	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0656 HRS		
3	03.31.2023	08086-09033		2286	4289		TT	25334	83780	27900	55,880	7,691.67	183.14			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1313 HRS		
4	03.31.2023	08086-09034	SRS2737	2286	4290		TT	25340	77060	29700	47,360	6,518.93	40,841	103,240	103,240	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1510 HRS		
										Totals to Date	212,160	29,203.03	41,381.17	212,160	212,160						

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	CONTAINER #	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	ional Comments
1	04.03.2023	08086-09035	SRS2741	2286	4362		TT	25346	81320	27900	53,420	7,353.06	46,067			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0800 HRS		
2	04.03.2023	08086-09036	SRS2742	2286	4289		TT	25349	74500	27900	46,600	6,414.32	40,186	100,020		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1015 HRS		
3	04.05.2023	08086-09037	SRS2746	2286	4290		TT	25360	74940	29700	45,240	6,227.12	39,013			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0955 HRS		
4	04.05.2023	08086-09038	SRS2744	1984	4362		TT	25363	71220	27340	43,880	6,039.92	37,840	89,120		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1330 HRS		
5	04.06.2023	08086-09039	SRS2744	2286	4284		TT	25371	81720	29700	52,020	7,160.36	44,860	52,020	241,160	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0930 HRS		
6	04.10.2023	08086-09040	SRS2746	2286	4289		TT	25377	80240	27900	52,340	7,204.40	45,136	52,340		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1110 HR		
7	04.12.2023	08086-09041	SRS2747	2286	4362		TT	25378	77920	27900	50,020	6,885.07	43,135			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0930 HRS		
8	04.12.2023	08086-09042	SRS2747	2286	4290		TT	25379	79720	29700	50,020	6,885.07	43,135	100,040		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1136 HRS		
9	04.14.2023	08086-09043	SRS2748	2286	4289		TT	25381	77280	27900	49,380	6,796.97	42,583			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0922 HRS		
10	04.14.2023	08086-09044	SRS2748	2286	4362		TT	25382	73660	27900	45,760	6,298.69	39,461	95,140	247,520	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1125 HRS		
11	04.18.2023	08086-09045	SRS2749	2286	4290		TT	25384	84620	29700	54,920	7,559.53	47,360			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0938 HRS		
12	04.18.2023	08086-09046	SRS2749	2286	4289		TT	25385	78120	27900	50,220	6,912.59	43,307	105,140		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1150 HRS		
13	04.20.2023	08086-09047	SRS2751	2286	4362		TT	25399	78840	27900	50,940	7,011.70	43,928			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0930 HRS		
14	04.20.2023	08086-09048	SRS2751	2286	4290		TT	25405	80240	29700	50,540	6,956.64	43,583	101,480	206,620	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	1145 HRS		
15	04.26.2023	08086-09049	SRS2750	2286	4289	SV28568L-1	TT	25412	77800	27900	49,900	6,868.55	43,031			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (SLOP OIL), 3, II	0930 HRS		
16	04.26.2023	08086-09050	SRS2765	2286	4362	SV28568L-2	TT	25413	81860	27900	53,960	7,427.39	176.84	103,860		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1140 HRS		
17	04.27.2023	08086-09051	SRS2765	2286	4290	SV28568L-3	TT	25416	75840	29700	46,140	6,351.00	151.21	46,140		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0850 HRS		
18	04.28.2023	08086-09052	SRS2764	1984	4289	SV28568L-4	TT	25423	70640	28000	42,640	5,869.24	139.74	42,640	192,640	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1245 HRS		
										Totals to Date	887,940	122,221.61	643,093.82	887,940	887,940						

LOAD #	DATE	BOL #	INVOICE #	TRUCK #	ONTAINER	FRAC TANK #	CONTAINER TYPE	TICKET #	GROSS (LBS)	TARE (LBS)	NET (LBS)	Net Gallons	Net BBl's	NET DAY TOTAL (LBS)	NET WEEKLY TOTAL (LBS)	CARRIER	LOCATION	MATERIAL	U.S. DOT Decription	Time In	Time Out	ional Comments
13	05.16.2023	08086-09064	SRS2788	2286	4362	NA	TT	25480	83360	30500	52,860	7,275.98	173.24			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1005 HRS		
14	05.16.2023	08086-09065	SRS2766	2286	4283	SV31001L-1	TT	25481	90800	29760	61,040	8,401.93	200.05	113,900		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1125 HRS		
15	05.18.2023	08086-09066	SRS2777	2286	4284	SV28568L-5	TT	29700	79100	29700	49,400	6,799.72	161.90			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0740 HRS		
16	05.18.2023	08086-09067	SRS2782	2286	4283	SV28568L-6	TT	25487	83720	29760	53,960	7,427.39	176.84			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0945 HRS		
17	05.18.2023	08086-09068	SRS2782	2286	4284	SV285687-1	TT	25490	91120	25490	65,630	9,033.72	215.09	168,990		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1050 HRS		
18	05.19.2023	08086-09069	SRS2784	2286	4290	SV26382L-1	TT	25495	90440	30400	60,040	8,264.28	196.77			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0920 HRS		
19	05.19.2023	08086-09070		2286	4283	SV26382L-2	TT	25497	87240	30400	56,840	7,823.81	186.28	116,880	399,770	DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1033 HRS		
20	05.22.2023	08086-09071	SRS2783	2286	4249	SV31001L-2	TT	25498	69500	27900	41,600	5,726.08	136.34			DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0746 HRS		
21	05.22.2023	08086-09072		2286	4284	SV31001L-3	TT	25499	85180	29700	55,480	7,636.61	181.82	97,080		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	0945 HRS		
22	05.23.2023	08086-09073		2286	4289	SV26382L-3	TT	25501	73280	27900	45,380	6,246.39	148.72	45,380		DANA TRANSPORT	TANK 273	SLOP OIL	UN1993, FLAMMABLE LIQUID, N.O.S. (F037), 3, II	1230 HRS		

Ferrous		
TOTAL 04/07/23		
LOCATION	BID GT	NET GT
TANK 270		35.00
TANK 271		215.70
TANK 272		437.30
TANK 273		8.35
TANK 281		585.10
TANK 282		331.30
TANK 284		523.00
TANK 282/284		11.90
TANK 285		340.10
TANK 285/286		11.40
TANK 286		295.70

Non-Ferrous		
AS OF 05/15/23		
TANK	**NET GT**	**Scrap Removal**
TANK 270	35.00	Allegheny / All-Met / EMR
TANK 272	437.30	Allegheny / All-Met
TANK 273	173.60	Allegheny / All-Met
TANK 276	38.20	Allegheny / All-Met
TANK 281	662.80	Allegheny / All-Met / EMR / SIMS
TANK 282	331.30	Allegheny / All-Met
TANK 284	523.00	Allegheny / All-Met
TANK 282/284	11.90	Allegheny / All-Met
TANK 285	340.10	Allegheny / All-Met
TANK 285/286	11.40	Allegheny / All-Met
TANK 286	295.70	Allegheny / All-Met

Appendix D

Select Figures from RIRs

Notes:
- Tank Group 06 boundaries/notation and cross section lines were added by Terraphase and were not on the original figures.
- The cross section lines were approximated from Figure 8 of the GHD 2017 AOI 7 RIR.

E

E'

Tank Group 06

Tank Group 06

NW Fill Area: Buried Lead Sludge Area 3 SWMU 89

NW Fill Area: Buried Lead Sludge Area 2 SWMU 88

NW Fill Area: Buried Lead Sludge Area 1 SWMU 87

Storage Tank Area: Buried Lead Sludge Area 4 SWMU 90

Storage Tank Area: Buried Lead Sludge Area 5 SWMU 91

1232 UNIT

433 UNIT

M AVENUE

L AVENUE

PENNY PACKER AVENUE

2nd STREET

3rd STREET

4th STREET

5th STREET

Old Tank Farm – Identified as Tanks 805-825

Former Hex Waste Tanks 1964-1967

Former Sludge Basins

Former Incinerator

Former UST's M-004 and M005

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Waterloo Ontario N2V 1C2 Canada
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Source: Aerial: Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

N

0 150 300 450
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Legend
- 2016 RI Groundwater Sample
- 2016 RI Soil Sample
- 2016 RI Soil Sample - not completed
- Water Table Monitoring Well
- Recovery Well
- Deep Monitoring Well
- Damaged Monitoring Well
- Destroyed Monitoring Well
- Monitoring Well (Unable to Locate)
- Air Sample
- Historical Soil Sample
- Bulkhead
- 3 Separator Remediation System
- 3 Separator Remediation System
- Existing Tank
- Former Tank
- Features Identified by Evergreen (not PA DEP incidents)
- Solid Waste Management Unit
- Area Of Interest

Original Size
ANSI D

Bar is one inch on original size drawing
0 1"

Project : 11109614

Date: Mar 28, 2017

EVERGREEN RESOURCES MANAGEMENT
AOI-7 PHILADELPHIA REFINERY OPERATIONS

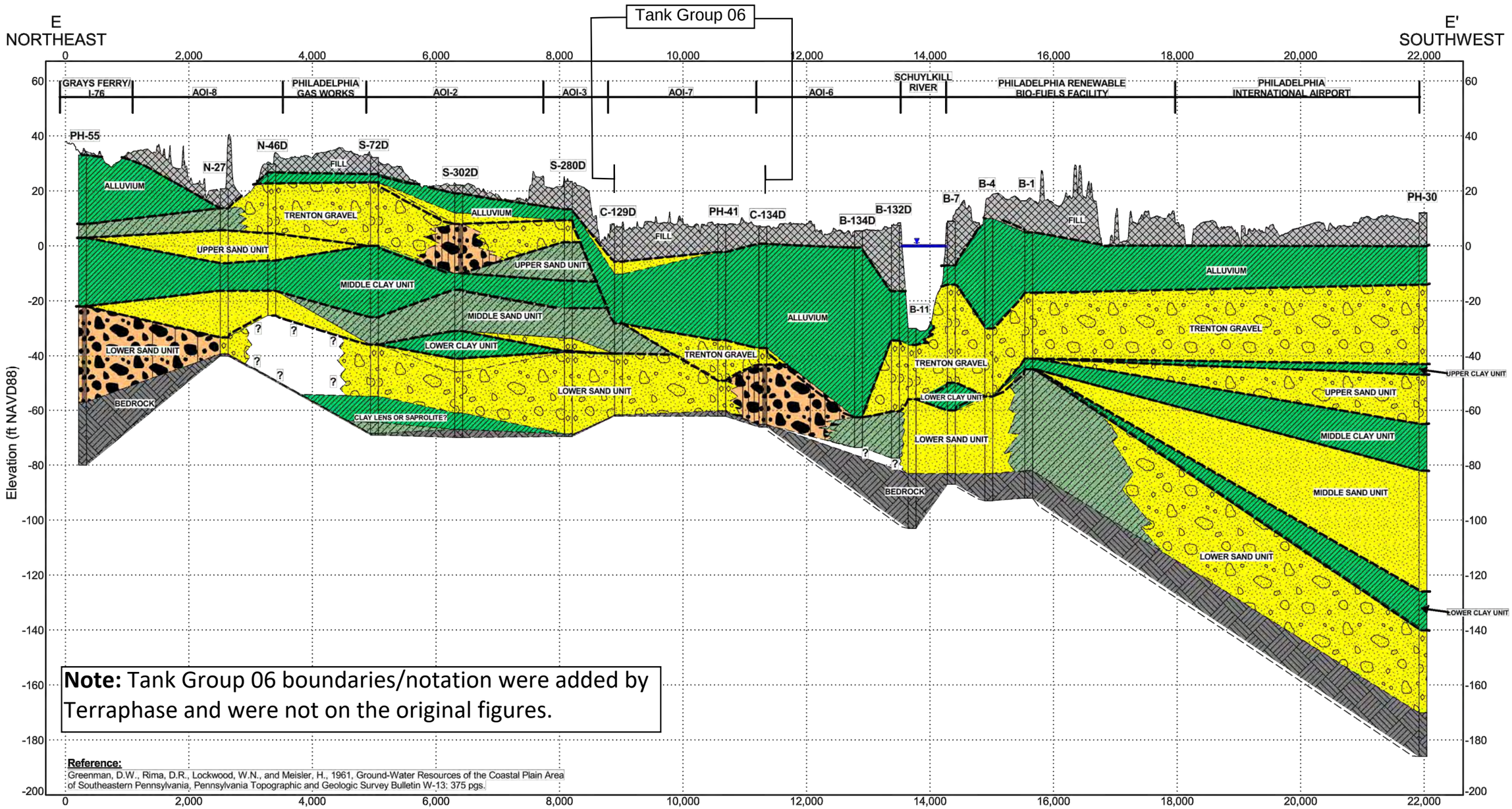
AOI 7 SITE PLAN

Figure No.

FIGURE 2

bing

GIS File: Q:\GIS\PROJECTS\111\09000\e111096014\Layouts\003\111096014-00(003)GIS-OT002.mxd



Note: Tank Group 06 boundaries/notation were added by Terraphase and were not on the original figures.

Reference:
Greenman, D.W., Rima, D.R., Lockwood, W.N., and Meisler, H., 1961, Ground-Water Resources of the Coastal Plain Area of Southeastern Pennsylvania, Pennsylvania Topographic and Geologic Survey Bulletin W-13: 375 pgs.

SOURCE: PHILADELPHIA REFINERY REMEDIATION PROGRAM GROUNDWATER REMEDIATION STATUS REPORT, FIRST HALF 2016, STANTEC, 2016.

GENERALIZED LITHOLOGY GRAPHICS

- Fill
- Sand (incl. trace to little silt/clay/gravel)
- Mud
- Sandy Gravel
- Muddy Sand
- Bedrock (incl. saprolite where indicated)
- Gravelly Sand
- Sand with Lignite

Notes:

1. Land surface profile obtained from a 2010 light detection and ranging (LIDAR) elevation model available from the United States Geological Survey (USGS).
2. Lithologic logs for borings PH-55, PH-41, B-11, B-7, B-4, B-1 and PH-30 were obtained from Tables 13 and 14 of Greenman et al., 1961. Geographic locations for those historic borings were estimated by Stantec in a GIS using a georeferenced image of Plate 1 of that report. Fill thicknesses interpreted by Stantec
3. PH-55 terminal boring depth deeper than shown.
4. Water depths for the Schuylkill River were estimated using soundings provided on the National Oceanic and Atmospheric Administration (NOAA) navigation chart for the Delaware River, Philadelphia and Camden Waterfronts (Chart 12313). Mean lower low water (MLLW) depths were transformed to the North American Vertical Datum of 1988 (NAVD 88).
5. Stantec generalized lithologic data from available borehole logs into 8 categories as indicated for interpretive purposes.
6. Correlation between lithologies and, where applicable, geologic units is based on the straight-line method. Actual conditions between boreholes may vary from what is shown on this profile. Contacts dashed where inferred.
7. Vertical Exaggeration ~ 45 X

GHD

EVERGREEN RESOURCES MANAGEMENT OPERATIONS LLC
PHILADELPHIA REFINERY - 3144 PASSYUNK AVENUE, PHILADELPHIA, PA
REMEDIAL INVESTIGATION REPORT

11109614-01

Nov 23, 2016

STRATIGRAPHIC PROFILE

FIGURE 8

CAD File: P:\drawings\11109000s\11109614\11109614-reports\11109614-01(003)\11109614-01(003)GN\11109614-01(003)GN-WA012.DWG

Notes:
- Tank Group 07 boundaries/notation and cross section lines were added by Terraphase and were not on the original figures.
- The cross section lines were approximated from Figure 8 of the GHD 2016 AOI 6 RIR.

Tank Group 07

Tank Group 07

E

E'

PENNY PACKER AVENUE

#3 BOILER HOUSE

#4 BOILER HOUSE

1733 UNIT

1332 UNIT

SWMU 92

SWMU 95

332 LINE

MAIN OFFICE

bing

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Source: Aerial: Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

0 150 300 450
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Legend
- 2016 RI Groundwater Sample
- Water Table Monitoring Well
- Recovery Well
- Deep Monitoring Well
- Damaged Monitoring Well
- Destroyed Monitoring Well
- Monitoring Well (Unable to Locate)
- Piezometer
- 2016 RI Soil Sample
- 2017 RI Soil Sample
- Historical Soil Sample
- 2016 RI (Not Sampled)
- 2016 RI (Attempted Sample Location)
- Air Sample
- Bulkhead
- Tank
- Tank Addressed in SCR/RACR 2017
- Solid Waste Management Unit
- Area Of Interest

Original Size	Bar is one inch on original size drawing
ANSI D	0 — 1"

Project: 11109613

Date: Nov 20, 2017

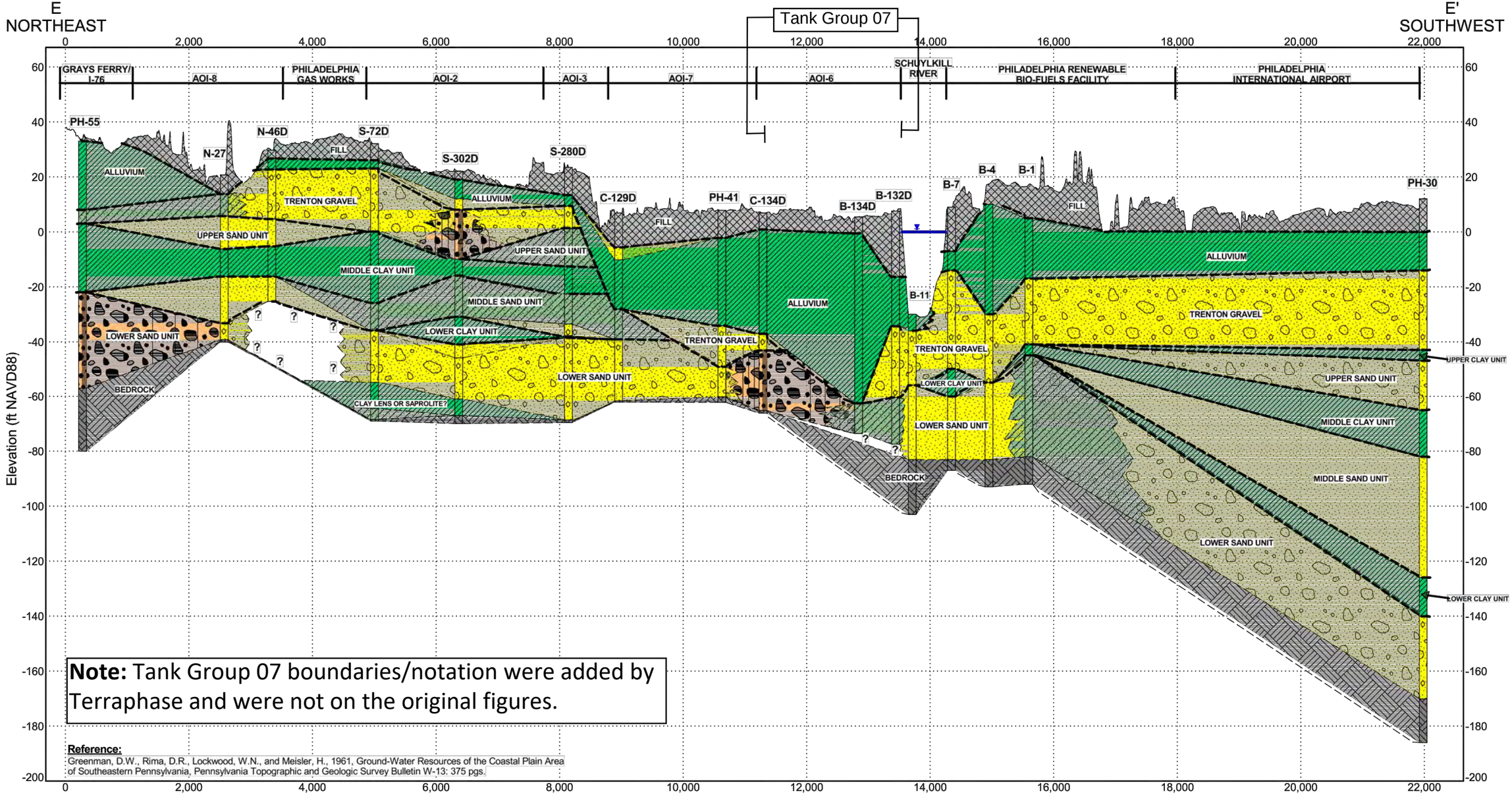
EVERGREEN RESOURCES MANAGEMENT
AOI-6 PHILADELPHIA REFINERY OPERATIONS

AOI 6 SITE PLAN

Figure No.

FIGURE 2

GIS File: Q:\GIS\PROJECTS\11109000\e\11109613\Layouts\002\11109613-000(002)GIS-OT002.mxd



Note: Tank Group 07 boundaries/notation were added by Terraphase and were not on the original figures.

Reference:
Greenman, D.W., Rima, D.R., Lockwood, W.N., and Meisler, H., 1961, Ground-Water Resources of the Coastal Plain Area of Southeastern Pennsylvania, Pennsylvania Topographic and Geologic Survey Bulletin W-13: 375 pgs.

SOURCE: PHILADELPHIA REFINERY REMEDIATION PROGRAM GROUNDWATER REMEDIATION STATUS REPORT, FIRST HALF 2016, STANTEC, 2016.

GENERALIZED LITHOLOGY GRAPHICS

- Fill
- Sand (incl. trace to little silt/clay/gravel)
- Mud
- Sandy Gravel
- Muddy Sand
- Bedrock (incl. saprolite where indicated)
- Gravelly Sand
- Sand with Lignite

Notes:

1. Land surface profile obtained from a 2010 light detection and ranging (LIDAR) elevation model available from the United States Geological Survey (USGS).
2. Lithologic logs for borings PH-55, PH-41, B-11, B-7, B-4, B-1 and PH-30 were obtained from Tables 13 and 14 of Greenman et al., 1961. Geographic locations for those historic borings were estimated by Stantec in a GIS using a georeferenced image of Plate 1 of that report. Fill thicknesses interpreted by Stantec
3. PH-55 terminal boring depth deeper than shown.
4. Water depths for the Schuylkill River were estimated using soundings provided on the National Oceanic and Atmospheric Administration (NOAA) navigation chart for the Delaware River, Philadelphia and Camden Waterfronts (Chart 12313), Mean lower low water (MLLW) depths were transformed to the North American Vertical Datum of 1988 (NAVD 88).
5. Stantec generalized lithologic data from available borehole logs into 8 categories as indicated for interpretive purposes.
6. Correlation between lithologies and, where applicable, geologic units is based on the straight-line method. Actual conditions between boreholes may vary from what is shown on this profile. Contacts dashed where inferred.
7. Vertical Exaggeration ~ 45 X

GHD

EVERGREEN RESOURCES MANAGEMENT OPERATIONS LLC
PHILADELPHIA REFINERY - 3144 PASSYUNK AVENUE, PHILADELPHIA, PA
REMEDIAL INVESTIGATION REPORT

11109613-01

Dec 1, 2016

STRATIGRAPHIC PROFILE

FIGURE 8

CAD File: P:\drawings\11109000s\11109613\11109613-reports\11109613-01(002)\11109613-01(002)GN\11109613-01(002)GN-WA011.DWG

Note:
- Tank Group 06 boundaries/notation were added by Terraphase and were not on the original figures.

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Source: Aerial: Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

0 150 300 450
Feet

Coordinate System:
NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet

Legend
- Groundwater Measurement (ft msl)
- 2016 RI Soil Sample
- Water Table Monitoring Well
- Recovery Well
- Deep Monitoring Well
- Damaged Monitoring Well
- Destroyed Monitoring Well
- Monitoring Well (Unable to Locate)
- Historical Soil Sample
- Bulkhead
- Groundwater Elevation Contour (ft msl)
- 3 Separator Remediation System
- 3 Separator Remediation System
- Solid Waste Management Unit
- Area Of Interest

Original Size: ANSI D

Bar is one inch on original size drawing: 0 — 1"

Project : 11109614

Date: Dec 19, 2016

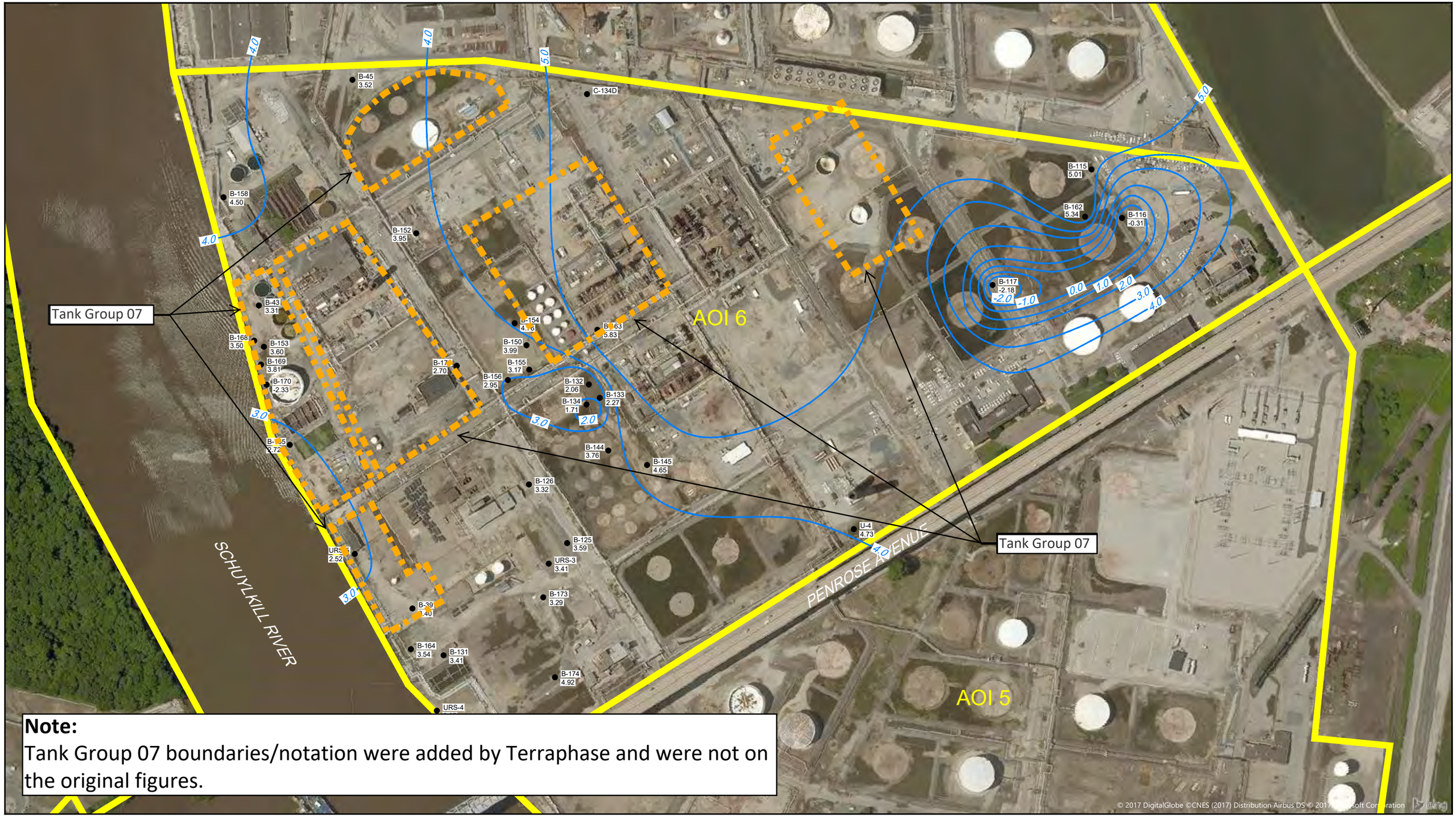
EVERGREEN RESOURCES MANAGEMENT - AOI-7

WATER TABLE GROUNDWATER ELEVATIONS SEPTEMBER 2016

Figure No.

FIGURE 14

GIS File: Q:\GIS\PROJECT\11109000\11109614\Layouts\003\11109614-00(003)GIS-OT014.mxd



Note:
Tank Group 07 boundaries/notation were added by Terraphase and were not on the original figures.

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date June 2014, Accessed: 2017

0 100 300ft

LEGEND

- B-39 — SAMPLE LOCATION
- 3.40 — WATER TABLE ELEVATION (ft. AMSL)
- 0.0 — WATER TABLE CONTOUR (ft. AMSL)

GHD

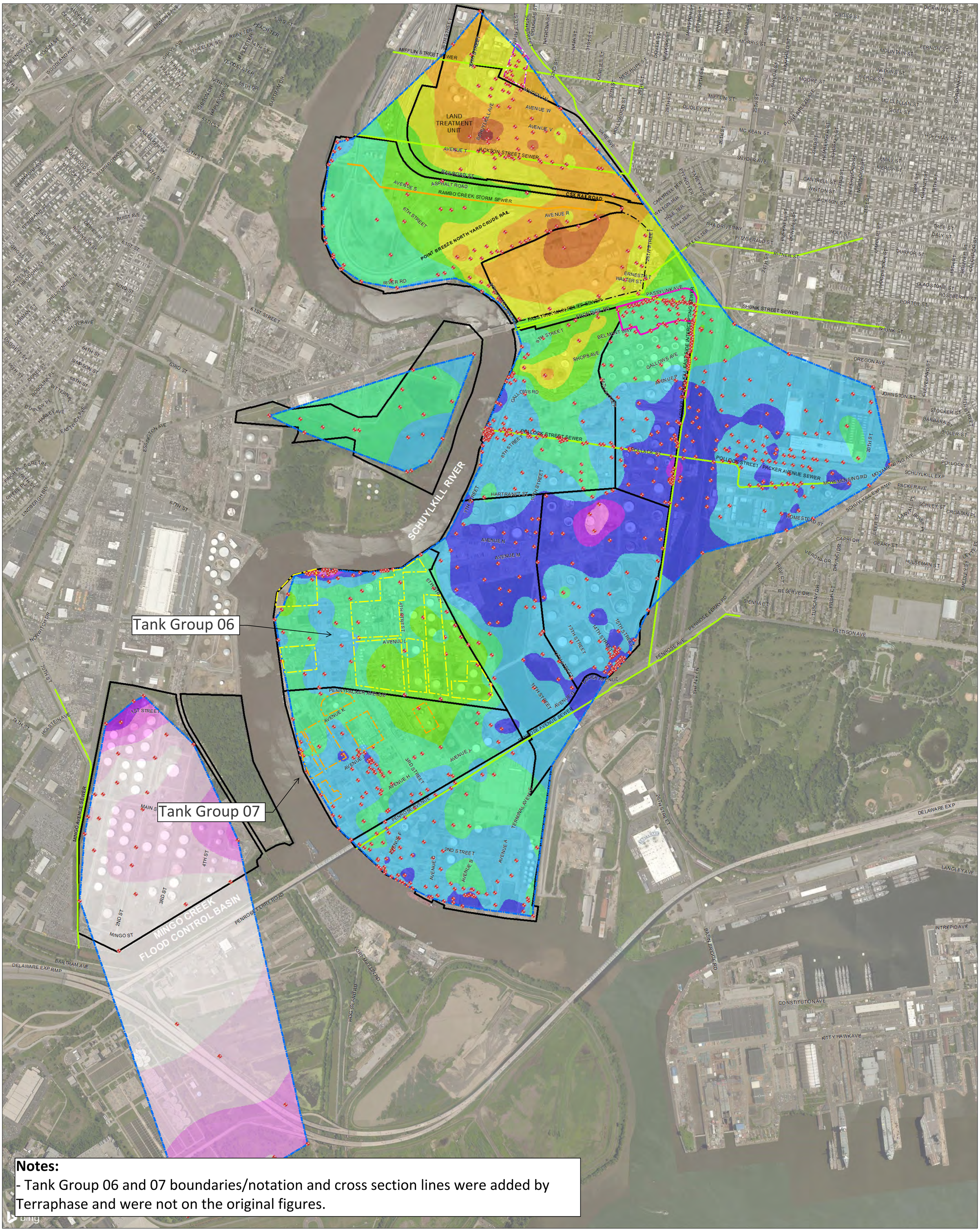
EVERGREEN RESOURCES MANAGEMENT OPERATIONS LLC
PHILADELPHIA REFINERY - 3144 PASSYUNK AVENUE, PHILADELPHIA, PA
REMEDIAL INVESTIGATION REPORT

WATER TABLE CONTOURS
MAY 2, 2016

11109613-01
Nov 11, 2017

FIGURE 14

CAD File: P:\drawings\11109000s\11109613\11109613-reports\11109613-01(002)\11109613-01(002)GN\11109613-01(002)GN-WA017.dwg



Notes:

- Tank Group 06 and 07 boundaries/notation and cross section lines were added by Terraphase and were not on the original figures.

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet North American Vertical Datum of 1988 (NAVD 88)
2. Sources: Stantec, Philadelphia Gas Works (PGW), and Defense Logistics Agency (DLA)
3. Depth to groundwater and LNAPL, where present, were measured in each well to the nearest one-hundredth of a foot using an interface probe.
4. FT NAVD88 = feet referenced to the North American Vertical Datum of 1988
5. Groundwater elevation data was interpolated using point kriging with a linear variogram model in Surfer to produce a surface model. The model is interpreted to be a reasonable approximation of the water-table elevation within the limits of the available well data.
6. Aerial & Topo Copyright:© 2013 National Geographic Society, i-cubed
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LEGEND

- WELL UTILIZED FOR THE JUNE 2018 WATER-TABLE ELEVATION SURFACE
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- APPROXIMATE LOCATION OF RAMBO CREEK STORM SEWER
- PHILADELPHIA GAS WORKS (PGW) PASSYUNK FACILITY
- VERIZON SOUTH DISTRICT WORK CENTER (SDWC) PROPERTY
- AREA OF INTEREST (AOI) BOUNDARY
- BELMONT TERMINAL
- APPROXIMATE LIMITS OF WATER-TABLE WELL CONTROL

JUNE 2018 WATER-TABLE ELEVATION
FT NAVD88

- 14 - 16
- 12 - 14
- 10 - 12
- 8 - 10
- 6 - 8
- 4 - 6
- 2 - 4
- 0 - 2
- -2 - 0
- -4 - -2
- -6 - -4
- -8 - -6
- -10 - -8

0 500 1,000 1,500 Feet

1:8,100 (At original document size of 24x36)

N

Figure No.

2-3-29

Title

JUNE 2018 WATER-TABLE ELEVATION

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location

City of Philadelphia,
Philadelphia County,
Pennsylvania

213402454
Prepared by ADK on 8/14/2018
Technical Review by ANP on 9/20/2018
Independent Review by JLM on 10/19/2018

Stantec

EVERGREEN

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Appendix E

Soil Boring Logs, Monitoring Well Installation Logs, and Groundwater Stabilization Logs

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-01
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.7		
			2.5		
2			2.7		
			13.1		
3			12.7		
			7.9		
4			16.9		
			21.7		
5	GPR270-01		25.8		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-03
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.4	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			2.7		
			11.7		
2			9.7		
			26.3		
3			18.4		
			26.9		
4	GPR270-03		47.9		
			36.2		
5			40.4		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-07
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			1.7		
			3.9		
2			15.9		
			12.9		
3			18.3		
			32.9		
4			27.8		
	GPR270-07		42.6		
5			36.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-08
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Blow Counts	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
				0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt
1				0.0	
				0.0	
2				1.2	
				1.4	
3				0.8	
		GPR270-08		1.8	
4				1.4	
				1.2	
5				1.4	
6					**END OF BORING (5 ft.)**
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-09
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4	GPR270-09		6.8		
			2.7		
5			5.8		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-11
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			3.6		
			2.7		
4			5.3		
			2.9		
5	GPR270-11		7.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-13
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.7		
5	GPR270-13		1.5		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR270-14
		Page 1 of 1
Client: PESRM		Date Start:12/05/2023
Project Name: PES Refinery		Date Finish: 12/05/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'; 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			1.6		
1	GPR270-14-0.5-1.0		1.9	Fine-medium, dark brown sand with gravel	
			6.8		
2			3.5		
	GPR270-14-2.0-2.5		95.5	Fine, dark brown sand	
3			28.7		
			25.7		
4	GPR270-14-3.5-4.0		41.8	Fine, dark gray clay	
			17.8		
5			14.7		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-15
		Page 1 of 1
Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Interval: 0.5-1.0' & 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1	GPR270-15-0.5-1.0		1.2		
			1.8		
2			4.0		
			0.7		
3			17.9		
	GPR270-15-3.0-3.5		18.4		
4			12.7		
			19.6		
5			26.8		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-16
		Page 1 of 1
Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.7		
			0.5		
2			0.0		
	GPR270-16-3.0-3.5		1.5		
3			0.0		
			0.0		
4			0.9		
			1.7		
5			2.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-17
		Page 1 of 1
Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.5-.2.0', 2.0-2.5' & 5.5-6.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			7.5		
2	GPR270-17-1.5-2.0		5.1		
	GPR270-17-2.0-2.5		2.5		
3			1.7		
			1.3		
4			6.9		
			10.3		
5			11.2		
			14.2	Dark Brown medium to fine SAND trace clayey silt	
6	GPR270-17-5.5-6.0		32.1		
			24.8		Wet
7			27.2	Black coarse to fine SAND trace fine gravel	
			35.2		
8			33.9		
			28.4	Black fine to medium SAND and CLAY trace fine gravel	
9			19.4		
			16.9		
10			12.1		
				END OF BORING (10 ft.)	
11					
12					
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14					
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-270-18
		Page 1 of 1
Client: PESRM		Date Start:4/19/2024
Project Name: PES Refinery		Date Finish: 4/19/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 0.5-1.0', 2.0-2.5' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1	GPR270-18-0.5-1.0		3.5		
			2.9		
2			3.1		
	GPR270-18-2.0-2.5		4.0		
3			1.7		
			2.1		
4			0.0		
			0.3	Brown medium to fine SAND trace clayey silt	
5			0.8		
			1.4		
6			5.8		
			16.9		
7	GPR270-18-6.5-7.0		25.8	Black medium to fine SANDsome fine gravel	
			26.9		Wet
8			22.7		
			18.6	Black fine to medium SAND and CLAY trace fine gravel	
9			10.5		
			13.5		
10			7.5		
				END OF BORING (10 ft.)	
11					
12					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-270-19
		Page 1 of 1
Client: PESRM		Date Start:4/19/2024
Project Name: PES Refinery		Date Finish: 4/19/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.0-1.5', 2.0-2.5' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.2		
	GPR270-19-1.0-1.5		0.9		
2			3.5		
	GPR270-18-2.0-2.5		2.8		
3			1.8		
			3.8		
4			4.0	Brown medium to fine SAND trace clayey silt	
			3.2		
5			5.9		
			7.4		
6			12.7		
			12.8		
7	GPR270-18-6.5-7.0		17.4	Black medium to fine SANDsome fine gravel	Wet
			18.3		
8			14.6		
			15.3		
9			9.4	Black fine to medium SAND and CLAY trace fine gravel	
			5.4		
10			6,2		
				END OF BORING (10 ft.)	
11					
12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-01
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-01-SS01		4.6	0.0'-5.0' Dark gray fine SAND and CLAY, saturated	
2			5.2		
3			2.7		
4			2.4		
5			2.2		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-02
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-02-SS01		1.1	0.0'-5.0' Dark gray fine SAND and CLAY, saturated	
2			1.3		
3			1.5		
4			1.7		
5			0.9		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-03
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-3-SS01		0.0	0.0'-5.0' Dark gray fine SAND and CLAY, moist	
2			2.6		
3			1.3		
4			0.7		
5			0.5		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-04
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 0.5'-1.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-04-SS01		20.8	0.0'-5.0' Dark gray fine SAND and CLAY, moist	
2			4.1		
3			2.0		
4			1.5		
5			3.5		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-05
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 0.5'-1.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-05-SS01		13.8	0.0'-5.0' Dark gray fine SAND and CLAY	
2			1.7		
3			7.0		
4			11.6		
5			7.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-06
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 0.5'-1.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-06-SS01		71.4	0.0'-5.0' Dark gray fine SAND and CLAY	
2			27.1		
3			27.8		
4			21.1		
5			32.7		
6				**END OF BORING (5 ft.)**	
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8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-07
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-07-SS01		0.4	0.0'-2.0' CONCRETE and medium GRAVEL	
2			0.6		
3			1.0	2.0'-5.0' Dark gray fine SAND, little Clay	
4			1.6		
5			2.0		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-09
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-09-SS01		2.4	0.0'-5.0' Dark gray fine SAND and CLAY, moist	
2			0.9		
3			103.1		
4			20.8		
5			14.9		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-10
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-10-SS01/DUP -55		18.4	0.0'-5.0' Dark gray fine SAND, some CLAY	
2			15.3		
3			12.2		
4			29.2		
5			15.0		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-11
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.0'-1.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-11-SS01		26.2	0.0'-5.0' Dark gray fine SAND and CLAY	
2			40.5		
3			20.4		
4			9.5		
5			11.7		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-12
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 0.5'-1.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-12-SS01		4.5	0.0'-5.0' Dark gray fine SAND and CLAY, saturated	
2			3.4		
3			2.8		
4			3.3		
5			3.5		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-13
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-13-SS01		1.3	0.0'-5.0' Dark gray fine SAND and CLAY, saturated	
2			2.5		
3			28.4		
4			12.2		
5			5.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-14
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 0.5'-1.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-14-SS01		66.6	0.0'-5.0' Dark gray fine SAND and CLAY	
2			8.5		
3			6.3		
4			2.1		
5			10.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-272-15
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-272-15-SS01		9.4	0.0'-5.0' Dark gray fine SAND and CLAY	
2			4.5		
3			4.1		
4			10.5		
5			19.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-01
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-01-SS01		16.6	0.0'-1.0' Gray fine angular GRAVEL	
2			5.9	1.0'-5.0' Dark gray fine SAND and CLAY	
3			56.6		
4			2.5		
5			2.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-02
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-02-SS01		0.0	0.0'-5.0' Dark gray fine SAND and CLAY, moist	
2			0.0		
3			6.8		
4			8.1		
5			0.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-03
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-03-SS01		0.4	0.0'-5.0' Dark gray fine SAND and CLAY, moist	
2			0.4		
3			0.2		
4			0.2		
5			3.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-04
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-04-SS01		12.6	0.0'-1.0' Gray fine angular GRAVEL	
2			4.0	1.0'-5.0' Dark gray fine SAND and CLAY	
3			4.4		
4			22.1		
5			80.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-05
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval:1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-05-SS01		3.3	0.0'-1.0' Gray fine angular GRAVEL	
2			9.4	1.0'-5.0' Dark gray fine SAND and CLAY	
3			5.4		
4			3.6		
5			5.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-07
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1			8.2	0.0'-4.0' Concrete	
2			1.8		
3			1.3		
4			1.5		
5	GPR-273-07-SS01		8.9	4.0'-5.0' Dark gray CLAY, moist	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-08
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-08-SS01		0.9	0.0'-5.0' Black fine SAND and CLAY	
2			2.5		
3			2.8		
4			2.2		
5			2.7		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-09
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.0'-1.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-09-SS01/DUP-56		0.1	0.0'-1.0' CONCRETE	
2			1.4	1.0'-5.0' Dark gray fine SAND and CLAY	
3			0.0		
4			0.0		
5			1.2		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-11
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-11-SS01		0.2	0.0'-1.0' CONCRETE	
2			0.7	1.0'-5.0' Dark gray fine SAND and CLAY	
3			0.7		
4			0.2		
5			0.7		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-12
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-12-SS01		0.5	0.0'-1.0' Gray fine angular GRAVEL	
2			0.2	1.0'-5.0' Dark gray fine SAND and CLAY	
3			2.0		
4			3.8		
5			4.4		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-13
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-13-SS01		0.0	0.0'-1.0' CONCRETE	
2			7.7	1.0'-5.0' Dark gray fine SAND and CLAY	
3			11.8		
4			10.9		
5			0.5		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-273-14
		Page 1 of 1
Client: PESRM		Date Start: 6/20/2023
Project Name: PES Refinery		Date Finish: 6/20/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Nick Calise	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-273-14-SS01		0.2	0.0'-1.0' CONCRETE	
2			0.4	1.0'-5.0' Dark gray fine SAND and CLAY	
3			1.1		
4			0.8		
5			1.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-01
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			11.2	0.0-3.0' Brown sandy FILL with some brick, ash and concrete gravel
			39.4	
2			55.3	
			34.8	
3			434.1	
			446.8	
4			801.3	3.0'-5.0' Dark brown and gray SILT
			1092.0	
5	GPR276-01		1508.0	
			1800.0	
6				**END OF BORING (5 ft.)**
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-03
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			5.3	0.0-3.0' Brown sandy FILL with some brick, ash and concrete gravel
			15.9	
2			398.8	
			716.3	
3			768.8	
			1015.0	
4			1432.0	3.0'-5.0' Dark brown and gray SILT
			1863.0	
5	GPR276-03		2559.0	
			2837.0	
6				**END OF BORING (5 ft.)**
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-05
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			18.2	0.0-3.5' Brown sandy FILL with some brick, ash and concrete gravel
			123.9	
2			17.9	
			170.3	
3			125.9	
			307.6	
4			619.2	
			434.1	3.5'-5.0' Dark brown and gray SILT
5	GPR276-05		1270.0	
			1402.0	
6				**END OF BORING (5 ft.)**
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-06
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR276-06		5.3	0.0-3.0' Brown sandy FILL with some brick, ash and concrete gravel	
			56.6		
2			155.4		
			747.7		
3			984.4		
			1109.0		
4			1245.0	3.0'-5.0' Dark brown and gray SILT	
			1001.0		
5			932.9		
			1615.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-07
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			27.3	0.0-3.0' Brown sandy FILL with some brick, ash and concrete gravel	
1			88.4		
			219.3		
2			237.3		
			360.1		
3			421.8		
			477.3	3.0'-5.0' Dark brown and gray SILT	
4			622.7		
			729.5		
5	GPR276-07		801.9		
				END OF BORING (5 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-11
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1			3.6	0.0-4.0' Brown sandy FILL with some brick, ash and concrete gravel	
			5.1		
2			14.1		
			71.9		
3			57.8		
			99.5		
4			137.8		
			141.9		
5	GPR276-11		178.8	4.0'-5.0' Dark brown and gray SILT	
			184.0		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-12
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			7.9	0.0-4.0' Brown sandy FILL with some brick, ash and concrete gravel
			8.5	
2			28.3	
			17.6	
3			44.2	
			55.7	
4			116.9	
			117.1	
5	GPR276-12		121.3	4.0'-5.0' Dark brown and gray SILT
			185.8	
6				**END OF BORING (5 ft.)**
7				
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-13
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			11.1	0.0-4.0' Brown sandy FILL with some brick, ash and concrete gravel	
1			19.5		
			55.5		
2			80.4		
			82.3		
3			85.0		
			131.4		
4			133.5		
			136.7	4.0'-5.0' Dark brown and gray SILT	
5	GPR276-13		161.4		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-276-15
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.6	0.0-4.0' Brown sandy FILL with some brick, ash and concrete gravel	
1			4.6		
			11.0		
2			11.5		
			11.2		
3			16.3		
			16.3		
4			22.0		
			24.6	4.0'-5.0' Dark brown and gray SILT	
5	GPR276-15		27.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-276-16
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
			2.3	0.0-3.0' Brown sandy FILL with some brick, ash and concrete
1			2.1	
			2.5	
2			8.6	
			12.2	
3			16.3	
			39.0	3.0'-5.0' Dark brown and gray SILT
4			39.3	
			46.0	
5	GPR276-16		49.1	
				END OF BORING (5 ft.)
6				
7				
8				
9				
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR276-16R
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'; 5.0'-5.5'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			2.2		Wet
1	GPR276-16R-0.5-1.0		47.5	Light-dark brown, fine-coarse sand with asphalt and gravel	
			25.2		
2			14.4		
	GPR276-16R-2.0-2.5		131		Wet
3			23.6		
			12.7		
4			15.5		
			22.1		
5			18.3		
	GPR276-16R-5.0-5.5		21.1		
6			2.4		
			3.1	Gray silty sand	
7			6.7		
			4.9		
8			8.2		
			18.9		
9			3.4		
			7.8		
10	GPR276-16R-9.5-10.0		14.3		
				END OF BORING (10 ft.)	
11					
12					
13					
14					
15					
16					
17					
18					
19					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-276-17
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
			0.5	0.0-3.0' Brown sandy FILL with some brick, ash and concrete
1			1.3	
			2.9	
2			2.4	
			7.3	
3			21.1	
			24.3	3.0'-5.0' Dark brown and gray SILT
4			25.4	
			44.0	
5	GPR276-17		44.8	
				END OF BORING (5 ft.)
6				
7				
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9				
10				
11				
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR276-18
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.5'-5.0'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			1.1	Dark gray/black silty sand	Wet
1	GPR276-18-0.5-1.0		0.7		
			2.9		
2			2.8		
			19.3		
3			6.2		
			30.9		
4			5.7		
			4.4	Concrete	
5	GPR276-18-4.5-5.0		82.4	Dark gray/black silty sand	Wet
			13.2		
6			4.0		
			3.8		
7			3.3		
			2.9		
8			3.1		
			4.8		
9			4.1		
			10.6		
10	GPR276-18-9.5-10.0		6.5		
				END OF BORING (10 ft.)	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR276-19
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 6.5'-7.0'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0	Dark gray silty sand	Wet
1	GPR276-19-0.5-1.0		0.0		
			1.1		
2			1.2		
			0.0		
3			0.3		
			0.8		
4			1.9		
			1.2		
5			1.0		
			1.5		
6			1.1		
			2.8		
7	GPR276-19-6.5-7.0		16.3		
			10.6		
8			5.6		
			5.7		
9			8.5		
			5.9		
10	GPR276-19-9.5-10.0		3.0		
				END OF BORING (10 ft.)	
11					
12					
13					
14					
15					
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22					
23					
24					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR276-20
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			2.3		
1	GPR276-20-0.5-1.0		2.3	Light brown/orange clay	
			2.8		
2			2.4		
			54.1		Wet
3			522		
	GPR276-20-3.0-3.5		4437	Brown/black, med-coarse sand with asphalt and gravel	
4			223		
			217		
5			203		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
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12					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR276-21
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			3.2		
1	GPR276-21-0.5-1.0		5.9		
			7.3	Brown, med-coarse sand with gravel	
2			5.5		
			5.9		
3	GPR276-21-2.5-3.0		770		
			102		
4			20.6	Black silty sand	
			23.7		
5			23.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
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22					
23					
24					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-281-01
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			123.8	0.0-5.0' Black and gray sandy FILL, with some silt	
1			115.5		
			184.3		
2			475.9		
			1032.3		
3			249.8		
			110.7		
4			109.3		
			1787		
5	GPR281-01		1969		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-281-07
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			12.2	0.0-5.0' Black and gray sandy FILL, with some silt	
1			17.3		
			19.4		
2			455.9		
			1004		
3			965.3		
			969.3		
4			333.2		
			1521		
5	GPR281-07		1635.2		
				END OF BORING (5 ft.)	
6					
7					
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9					
10					
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24					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-281-08
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR281-08		12.4	0.0-3.0' Black and gray sandy FILL	
			9.3		
2			7.2		
			140.3		
3			122.9		
			156.1		
4			522.6	3.0'-5.0' Gray SILT with some coarse sand	
			1662		
5			1713		
			1927		
6				**END OF BORING (5 ft.)**	
7					
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11					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-281-10
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			17.9	0.0-5.0' Light brown sandy FILL	
1			43.9		
			168.7		
2			203.6		
			204.2		
3			450.6		
			1203		
4	GPR281-10		1387		
			802.4		
5			739.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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22					
23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-281-11
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			4.3	0.0-5.0' Brown coarse SAND with some light gray silt	
1			30.8		
			36.3		
2			489.9		
			222.7		
3			195.9		
			123.9		
4			802.4		
			1608		
5	GPR281-11		1695		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
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14					
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23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-281-12
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			11	0.0-5.0' Brown coarse SAND with some light gray silt	
1			10.5		
			12.2		
2			43		
			103.8		
3			48.5		
			514.4		
4			674.5		
			573.1		
5	GPR281-12		737.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR281-13
		Page 1 of 1
Client: PESRM		Date Start:12/01/2023
Project Name: PES Refinery		Date Finish: 12/01/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.6		
1	GPR281-13-0.5-1.0		1.0		
			1.4	Brown, med-coarse sandy fill	
2			2.3		
			1.3		
3			2.8		
			2.1		
4	GPR281-13-3.5-4.0		3.5	Black silty sand	
			2.9		
5			2.8		
				END OF BORING (5 ft.)	
6					
7					
8				0.0-5.0' Brown coarse SAND with some light gray silt	
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR281-14
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.2		
1	GPR281-14-0.5-1.0		0.1		
			0.4	Brown, med-coarse sandy fill	
2			0.7		
			0.9		
3			0.7		
			0.6		
4			1.0	Black silty sand	
			0.7		
5	GPR281-14-4.5-5.0		1.4		
				END OF BORING (5 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-01
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-01		25.1	0.0-5.0' Brown and black coarse sandy FILL with brick, concrete, ash	
			15.9		
2			13.2		
			32.3		
3			21.2		
			49.4		
4			56.9		
			720.4		
5			861.5		
			925.8		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-03
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-03		1.6	0.0-5.0' Brown and black coarse sandy FILL with brick, concrete, ash	
			8.2		
2			8.4		
			9.7		
3			23.2		
			59.9		
4			24.3		
			140.9		
5			129.8		
			202.7		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-05
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-05		10.7 23.2	0.0-5.0' Brown and black coarse sandy FILL with brick, concrete, ash	
2			27.3 50.1		
3			55.7 60.9		
4			103.8 105.7		
5			492.1 387.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-07
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-07		1.7	0.0-5.0' Brown and black coarse sandy FILL with some silt	
			2.7		
2			52.9		
			44.7		
3			103.1		
			55.1		
4			62.8		
			42.3		
5			291.7		
			140.8		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-08
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			15.9	0.0-5.0' Black and gray coarse sandy FILL with some silt	
1			12.8		
			14.9		
2			42.7		
			43.8		
3			44.1		
			32		
4			20.7		
			34.8		
5	GPR282-08		108.3		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR-282-10
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-10		0.0	0.0-5.0' Black and gray coarse sandy FILL with some silt	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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11					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-282-12
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-12		0.0	0.0-5.0' Black and gray coarse sandy FILL with some silt	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			0.0		
			0.0		
5			0.0		
			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR282-13
		Page 1 of 1
Client: PESRM		Date Start:12/01/2023
Project Name: PES Refinery		Date Finish: 12/01/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR282-13-0.5-1.0		1.4 2.1	Brown/black, med-coarse sandy fill	
2			1.6 1.1		
3			1.7 1.4		
4	GPR282-13-3.0-3.5		6.7 4.9		
5			2.1 1.5		
6				**END OF BORING (5 ft.)**	
7					
8				0.0-5.0' Brown coarse SAND with some light gray silt	
9					
10					
11					
12					
13					
14					
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18					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-01
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR284-01		1.9	0.0-5.0' Brown fine-to-coarse SAND with some gravel	
			3.3		
2			2.3		
			2.1		
3			9.9		
			15.8		
4			11.2		
			3.7		
5			1.9		
			1.8		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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14					
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19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-03
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			11.7	0.0-5.0' Brown fine-to-coarse SAND with some gravel	
1			12.5		
			12.3		
2			12.2		
			17.0		
3			23.9		
			24.3		
4			25.8		
			30.1		
5	GPR284-03		39.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
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19					
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23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-05
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0	0.0-5.0' Brown fine-to-coarse SAND with some silt	
1			1.3		
			32.9		
2			23.9		
			12.5		
3			39.1		
			47.8		
4			45.3		
			102.7		
5	GPR284-05		292.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-07
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			6.7	0.0-5.0' Brown fine-to-coarse SAND with some silt	
1			2.1		
			3.9		
2			4.3		
			34.9		
3			35.8		
			27.2		
4			67.8		
			281.1		
5	GPR284-07		353.3		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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17					
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19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-08
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse SAND with some silt	
1			0.0		
			0.0		
2			4.5		
			4.9		
3			5.3		
			19.5		
4			25.9		
			25.1		
5	GPR284-08		33.8		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-09
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse SAND with some silt	
1			0.0		
			0.0		
2			3.5		
			5.1		
3			7.4		
			16.7		
4			24.8		
			26.9		
5	GPR284-09		29.4		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-10
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5', Dup-52	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.3	0.0-5.0' Brown fine-to-coarse sandy FILL with gravel	
1			1.9		
			1.1		
2			5.9		
			6.5		
3			4.0		
			2.7		
4			3.2		
	GPR284-10, Dup-52		9.8		
5			1.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-11
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.7	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			1.5		
			3.8		
2			5.5		
			1.0		
3			2.3		
			4.3		
4			9.9		
	GPR284-11		16.1		
5			10.3		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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23					
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25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-13
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.2	0.0-5.0' Brown and black coarse sandy FILL	
1			0.6		
			5.9		
2			5.2		
			6.0		
3			9.0		
			9.6		
4			10.3		
			10.2		
5	GPR284-13		14.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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17					
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19					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-14
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.4	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			12.2		
			3.3		
2			35.4		
			29.4		
3			45.5		
			80.1		
4			77.3		
			101.2		
5	GPR284-14		199.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-284-15
		Page 1 of 1
Client: PESRM		Date Start:12/06/2022
Project Name: PES Refinery		Date Finish: 12/06/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			15.7	0.0-5.0' Brown coarse SAND with some gray silt	
1			13.3		
			16.9		
2			30.1		
			30.9		
3			30.7		
			43.8		
4			92.7		
			93.4		
5	GPR284-15		95.5		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR284-16
		Page 1 of 1
Client: PESRM		Date Start:12/01/2023
Project Name: PES Refinery		Date Finish: 12/01/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 7.5'-8.0'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR284-16-0.5-1.0		1.5	Dark gray/black, coarse sandy fill	Wet
			2.1		
2			2.8		
			2.3		
3			1.6		
			4.3		
4			4.6	Dark gray/black, coarse sand with some silt	Wet
			11.8		
5			8.1		
			7.7		
6			6.2		
			3.3		
7			5.5		
			5.7		
8	GPR284-16-7.5-8.0		4.7		
			16.7		
9			4.3		
			4.3		
10	GPR284-16-9.5-10.0		3.9		
			4.6		
11				**END OF BORING (10 ft.)**	
12					
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21					
22					
23					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR284-17
		Page 1 of 1
Client: PESRM		Date Start:12/01/2023
Project Name: PES Refinery		Date Finish: 12/01/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR284-17-0.5-1.0		2.4	Brown/black, coarse sandy fill	
			3.2		
2			3.3		
			6.1		
3	GPR284-17-2.5-3.0		6.3	Dark gray/black, coarse sand with some silt	Wet
			11.2		
4			7.4		
			7.2		
5			3.7		
			4.9		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-01
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.7	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			7.3		
			8.1		
2			8.1		
			11.8		
3			12.2		
			14.7		
4			14.1		
			20.6	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-01		40.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
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12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-02
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			2.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			9.2		
			11.7		
2			14.9		
			14.4		
3			15.9		
			19.4		
4			35.3		
			47.0	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-02		52.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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13					
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18					
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-03
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			2.5	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			4.5		
			5.9		
2			20.6		
			16.0		
3			12.1		
			28.4		
4			38.6		
			36.9	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-03		50.0		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
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14					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-07
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.8	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			4.9		
			4.9		
2			8.1		
			12.0		
3			38.7		
			34.9		
4			33.2		
			44.8	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-07		49.4		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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19					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-08
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			1.2	0.0-4.0' Brown sandy FILL with some brick, ash and concrete
			1.7	
2			1.3	
			9.3	
3			11.1	
			15.7	
4			14.4	
			19.4	
5	GPR285-08, Dup-53		24.3	4.0'-5.0' Dark brown and gray SILT
			32.9	
6				**END OF BORING (5 ft.)**
7				
8				
9				
10				
11				
12				
13				
14				
15				
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR285-09
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR285-09-0.5-1.0		0.0		
			0.0	Brown, med-coarse sandy fill	
2			0.0		
	GPR285-09-2.0-2.5		8.1		
3			0.0		Wet
			0.0		
4			0.0	Dark gray silty sand	
			0.0		
5			0.0		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
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23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-11
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			5.9	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			3.2		
			7.9		
2			23.9		
			22.7		
3			19.4		
			12.2		
4			8.4		
			19.2	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-11		52.7		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-285-13
		Page 1 of 1
Client: PESRM		Date Start:12/07/2022
Project Name: PES Refinery		Date Finish: 12/07/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.7	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			1.3		
			2.5		
2			3.0		
			1.9		
3			32.3		
			40.7		
4			49.0		
			44.7	4.0'-5.0' Dark brown and gray SILT	
5	GPR285-13		70.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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20					
21					
22					
23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR285-14
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 5.0'-5.5'; 6.0'-6.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR285-14-0.5-1.0		0.0		
			0.0		
2			0.4		
			0.0	Dark gray/black, med-coarse sandy fill	
3			0.0		
			0.1		
4			1.3		
			1.1		
5			0.6		Wet
	GPR285-14-5.0-5.5		2.7		
6			1.7		
	GPR285-14-6.0-6.5		0.8		
7			0.2		
			0.0	Dark gray silty sand	
8			0.1		
			0.0		
9			0.0		
			0.0		
10			0.0		
				END OF BORING (10 ft.)	
11					
12					
13					
14					
15					
16					
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20					
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22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR285-15

Page 1 of 1

Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 6.0'-6.5'; 6.5'-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		Wet
1	GPR285-15-0.5-1.0		0.0		
			0.0		
2			0.0		
			0.0		
3			0.1		
			0.0		
4			0.1		
			0.1		
5			0.0		
			0.0	Dark gray silty sand	
6			0.6		
	GPR285-15-6.0-6.5		4.1		
7	GPR285-15-6.5-7.0		0.4		
			0.0		
8			0.0		
			0.0		
9			0.1		
			0.0		
10			0.0		
11				**END OF BORING (10 ft.)**	
12					
13					
14					
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16					
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18					
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20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR285-16
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR285-16-0.5-1.0		0.0		
			0.0		
2			0.0		
			0.0	Brown/red/gray, med-coarse sandy fill	
3			0.0		
	GPR285-16-3.0-3.5		0.0		
4			0.0		
			0.0		
5			0.0	Dark gray silty sand	Wet
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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21					
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR285-17
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR285-17-0.5-1.0		0.0		
			0.0		
2			0.0		
			0.0	Brown/red/gray, med-coarse sandy fill	
3	GPR285-17-2.5-3.0		0.0		
			0.0		
4			0.0		
			0.0		
5			0.0	Dark gray silty sand	Wet
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-01
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			2.1		
			10.4		
2			42.7		
			110		
3			106		
			159		
4			289		
			315	4.0'-5.0' Dark brown and gray SILT	
5	GPR286-01		325		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-03
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.2	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			1.7		
			1.3		
2			9.3		
			11.1		
3			15.7		
			14.4		
4			19.4		
			24.3	4.0'-5.0' Dark brown and gray SILT	
5	GPR286-03		32.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-05
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete
			0.0	
2			0.0	
			0.0	
3			0.0	
			0.0	
4			0.0	
			0.0	
5	GPR286-05		19.4	4.0'-5.0' Dark brown and gray SILT
			15.0	
6				**END OF BORING (5 ft.)**
7				
8				
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23				
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-07
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete
1			0.0	
			0.0	
2			0.0	
			0.0	
3			0.0	
			5.2	
4			14.1	
			17.8	4.0'-5.0' Dark brown and gray SILT
5	GPR286-07		18.9	
6				**END OF BORING (5 ft.)**
7				
8				
9				
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19				
20				
21				
22				
23				
24				
25				

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-08
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			1.4		
			7.4		
4			16.4		
			20.2	4.0'-5.0' Dark brown and gray SILT	
5	GPR286-08		22.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR286-09

Page 1 of 1

Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR286-09-0.5-1.0		0.0	Brown/gray, med-coarse sandy fill	Wet
			0.0		
2			0.0		
			0.0		
3			0.0		
			3.9		
4	GPR286-09-3.0-3.5		6.8	Dark gray silty sand	Wet
			2.4		
5			0.2		
			0.4		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-11
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			3.7		
4			4.2		
			2.1	4.0'-5.0' Dark brown and gray SILT	
5	GPR286-11		21.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-13
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete
			0.0	
2			0.0	
			1.7	
3			2.7	
			12.1	
4			6.9	
			19.9	
5	GPR286-13		25.8	4.0'-5.0' Dark brown and gray SILT
			27.3	
6				**END OF BORING (5 ft.)**
7				
8				
9				
10				
11				
12				
13				
14				
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16				
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20				
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23				
24				
25				

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR286-14
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		Wet
1	GPR286-14-0.5-1.0		0.1	Brown/gray, med-coarse sandy fill	
			0.4		
2			0.3		Wet
			2.3		
3			1.9		
			2.8	Dark gray silty sand	
4			1.2		
			0.6		
5	GPR286-14-4.5-5.0		7.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR286-15
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		Wet
1	GPR286-15-0.5-1.0		2.1	Brown/gray, med-coarse sandy fill	
			2.0		
2			44.9		
	GPR286-15-2.0-2.5		315		Wet
3			60.2		
			10.1	Dark gray silty sand	
4			47.6		
			78.5		
5			86.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-286-16
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description
1			0.0	0.0-4.0' Brown sandy FILL with some brick, ash and concrete
			0.0	
2			0.0	
			2.5	
3			8.9	
			27.9	
4			15.2	
			31.7	
5	GPR286-16		39.7	4.0'-5.0' Dark brown and gray SILT
			32.6	
6				**END OF BORING (5 ft.)**
7				
8				
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11				
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14				
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24				
25				

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR286-17
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR286-17-0.5-1.0		0.0		
			0.0		
2			0.0	Brown/gray, med-coarse sandy fill	
			0.0		
3			0.0		
			0.0		
4			0.3		
			0.0	Dark gray silty sand	
5	GPR286-17-4.5-5.0		0.5		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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19					
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22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR286-18
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR286-18-0.5-1.0		0.0	Brown/gray, med-coarse sandy fill	
2			0.0		
3			0.0		
4	GPR286-18-3.0-3.5		0.0		
5			0.0		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR973-08
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR973-08-0.5-1.0		0.0		
			0.0	Concrete	
2			0.0		
			0.0		
3			18.8		
			7.8		
4			10.4	Brown/gray/black, med-coarse sandy fill	
	GPR973-08-4.0-4.5		22.6		
5			19.7		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR973-09
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			2.8		
1	GPR973-09-0.5-1.0		4.6		
			3.6		
2			2.2		
			4.3		
3			4.5	Brown, med-coarse sandy fill	
	GPR973-09-3.0-3.5		5.5		
4			5.1		
			3.1		
5			3.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR973-10
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0	Concrete	
1	GPR973-10-0.5-1.0		1.3		
			1.4		
2			0.8	Light brown, coarse sand	
			4.8		
3			21.5		
			14.7		
4	GPR973-10-3.5-4.0		33.8	White, coarse sand	
			21.4		
5			9.9		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR973-11
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0	Concrete	
1	GPR973-11-0.5-1.0		3.3	Light brown, coarse sand	
			4.9		
2			9.2		
			11.7		
3			11.2		
	GPR973-11-3.0-3.5		22.1		
4			12.8	White, coarse sand	
			15.6		
5			20.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1101-01
		Page 1 of 1
Client: PESRM		Date Start:12/09/2022
Project Name: PES Refinery		Date Finish: 12/09/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			1.7		
			2.4		
2			12.9		
			24.8		
3			36.7		
			35.9		
4			75.8		
			50.6		
5	GPR1101-01		102.0		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1101-02
		Page 1 of 1
Client: PESRM		Date Start:12/09/2022
Project Name: PES Refinery		Date Finish: 12/09/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			0.0		
			0.0		
2			0.0		
			2.6		
3			3.9		
	GPR1101-02		15.7		
4			12.9		
			13.0		
5			15.2		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1101-03
		Page 1 of 1
Client: PESRM		Date Start:12/09/2022
Project Name: PES Refinery		Date Finish: 12/09/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			0.0		
			0.0		
2			2.3		
			1.9		
3			18.3		
			15.9		
4			21.8		
	GPR1101-03		24.7		
5			16.4		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1101-04
		Page 1 of 1
Client: PESRM		Date Start:12/09/2022
Project Name: PES Refinery		Date Finish: 12/09/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			1.2	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			10.4		
			58.9		
2			105		
			136		
3			179		
			185		
4			225		
			204		
5	GPR1101-04		268		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1101-05
		Page 1 of 1
Client: PESRM		Date Start:12/09/2022
Project Name: PES Refinery		Date Finish: 12/09/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown and black coarse SAND with little gray SILT	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			4,8		
			8.9		
4			14.6		
	GPR1101-05		22.6		
5			21.8		
				END OF BORING (5 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR1101-06
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 3.5'-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			3.7		
1	GPR1101-06-0.5-1.0		5.2		
			10.1	Brown, med-coarse sandy fill	
2			1.6		
			3.3		
3			26.2		
			21.9		
4	GPR1101-06-3.5-4.0		36.1	Dark gray/black, silty sand	
			31.7		
5			16.7		
				END OF BORING (5 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR1101-07
		Page 1 of 1
Client: PESRM		Date Start:12/05/2023
Project Name: PES Refinery		Date Finish: 12/05/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.0		
1	GPR1101-07-0.5-1.0		0.0		
			0.0	Brown, med-coarse sandy fill with concrete	
2			0.0		
			16.2		
3	GPR1101-07-2.5-3.0		121.2		
			38.3		
4			26.1	Dark gray/black, silty sand	
			21.1		
5			14.5		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR1101-08
		Page 1 of 1
Client: PESRM		Date Start:12/05/2023
Project Name: PES Refinery		Date Finish: 12/05/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			1.2		
1	GPR1101-08-0.5-1.0		0.0		
			0.4		
2			0.9	Brown, med-coarse sandy fill with concrete	
			0.0		
3			0.0		
			0.3		
4			1.4		
			1.9	Dark gray/black, silty sand	
5	GPR1101-08-4.5-5.0		3.7		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR 1101-09

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Client: PESRM		Date Start: 7/19/2024
Project Name: PES Refinery		Date Finish: 7/19/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Conor Healy	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Chris Olsen	Sample Intervals: 1.5'-2.0' 3.5'-4.0' 8.5'-9.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0	Gravel	
1			6.3	Brick	
			16.4	Black coarse sand medium angular gravel	
2	GPR 1101-09-1.5-2.0		50.1		
			18.6		
3			8.4		
			3.1		
4	GPR 1101-09-3.5-4.0		4.0	Medium angular gravel little brown coarse sand	
			9.0		moist
5			20.1		
			14.2	Angular fine gravel	
6			1.1		moist
			1.9		
7			2.3	Brown medium to coarse sand and brick trace clay	
			0.7		moist
8			0.9		
			0.4	Dark brown clay trace brown fine sand	
9	GPR 1101-09-8.5-9.0		0.9		
			0.7	Brown medium to fine sand little clay	saturated
10			1.1		
11				**END OF BORING (10 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR 1101-10
		Page 1 of 1
Client: PESRM		Date Start: 7/19/2024
Project Name: PES Refinery		Date Finish: 7/19/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Conor Healy	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Chris Olsen	Sample Intervals: 2.5'-3.0' 3.5'-4.0' 8.0'-8.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0	Gravel	
1			0.1	Wood chips	
			0.1		
2			0.1		
			0.1		
3	GPR 1101-10-2.5-3.0		0.2	Grey medium to coarse sand and fine to medium sub-angular gravel	
			0.2		
4	GPR 1101-10-3.5-4.0		0.2		
			0.2	Dark black fine sand some clay	
5			0.2		
			0.7		
6			0.8		
			7.6		
7			1.8	Dark black clay trace sand	
			2.4		
8			2.3		
	GPR 1101-10-8.0-8.5		8.6		Saturated
9			0.9	Dark black fine to coarse sand	
			1.0		
10			1.0		
				END OF BORING (10 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-01
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1038-01-SS01		6.5	0.0-2.0' Medium brown fine SAND, saturated	
2			6.6		
3			5.4	2.0'-3.0' Brick material	
4			3.8	3.0'-5.0' Dark gray CLAY, little fine Sand	
5			5.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-02
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1038-02-SS01		151.9	0.0-5.0' Dark gray fine to medium GRAVEL, some medium Sand	
2			20.7		
3			522.6		
4			243.6		
5			99.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-03
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1038-03-SS01		4.4	0.0-5.0' Dark gray fine to medium GRAVEL, some medium Sand	
2			40		
3			15000		
4			337.4		
5			84.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-04
		Page 1 of 1
Client: PESRM		Date Start: 6/15/2023
Project Name: PES Refinery		Date Finish: 6/15/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Interval: 1.5'-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1038-04-SS01		23.7	0.0-1.0' Brown fine to medium GRAVEL, some medium SAND	
2			35.8	1.0'-5.0' Black medium to fine SAND little fine GRAVEL	
3			21.6		
4			16.8		
5			15.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-05
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1038-05-SS01		2.6	0.0-3.0' Medium brown medium SAND	
2			5		
3			3		
4			12.7	3.0'-5.0' Dark gray fine GRAVEL and CLAY	
5			9.0		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR1038-06
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.5'-3.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.2		
1	GPR1038-06-0.5-1.0		0.3	Brown/gray, med-coarse sandy fill	
			1.5		
2			7.9		
			4.1		
3	GPR1038-06-2.5-3.0		10.2		
			2.0	Dark gray/black, silty sand	
4			0.7		
			0.0		
5	GPR1038-06-4.5-5.0		0.4		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC	**Soil Boring Log**	Boring No.: GPR1038-07
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 1.5'-2.0'; 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.6		
1	GPR1038-07-0.5-1.0		1.7		
			45.3	Brown/gray, med-coarse sandy fill	
2	GPR1038-07-1.5-2.0		47.7		
			2.5		
3			1.8		
			5.7		
4			1.6	Dark gray/black, silty sand	
			3.2		
5	GPR1038-07-4.5-5.0		2.6		
				END OF BORING (5 ft.)	
6					
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR-1038-08

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Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.5-2.0', 2.5-3.0' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown medium-to-fine sandy FILL with some fine gravel	
1			0.0		
			0.2		
2	GPR1038-08-1.5-2.0		0.4		
			8.3	Dark Gray SILTY SAND trace fine gravel	
3	GPR1038-08-2.5-3.0		7.2		
			6.5		
4			3.6		
			2.9		
5			2.1		
			0.9		
6			0.5		
			1.0		
7	GPR1038-08-6.5-7.0		5.8	Black medium to fine SAND some fine gravel	
			12.7		Wet
8			4.7	Black fine to medium SAND and CLAY trace fine gravel	
			3.6		
9			0.3		
			0.7		
10			0.0		
				END OF BORING (10 ft.)	
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR-1038-09

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Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.5-2.0', 2.5-3.0' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2	GPR1038-09-1.5-2.0		0.5	Brown medium to fine SAND trace clayey silt	
			1.2		
3	GPR1038-09-2.5-3.0		1.5		
			3.2		
4			1.9		
			0.6		
5			0.3		
			0.4		
6			2.8	Dark Gray SILTY SAND trace fine gravel	
			3.4		
7	GPR1038-09-6.5-7.0		12.7	Black medium to fine SANDsome fine gravel	
			16.8		Wet
8			2.6		
			0.4		
9			0.0	Black fine to medium SAND and CLAY trace fine gravel	
			0.0		
10			0.0		
				END OF BORING (10 ft.)	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1038-10
		Page 1 of 1
Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.5-2.0', 4.5-5.0' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.3		
			21.0		
2	GPR1038-10-1.5-2.0		25.2		
			8.9		
3			6.9		
			2.8		
4			4.9		
			2.6		
5	GPR1038-10-4.5-5.0		1.9		
			5.9	Black medium to fine SANDsome fine gravel	
6			4.3		
			1.1		
7	GPR1038-10-6.5-7.0		4.7		
			15.8		Wet
8			12.6	Black fine to medium SAND some CLAY trace fine gravel	
			2.6		
9			3.5		
			1.5		
10			0.7		
				END OF BORING (10 ft.)	
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Ransom Consulting, LLC

Soil Boring Log

Boring No.: GPR-1038-11

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Client: PESRM		Date Start:4/18/2024
Project Name: PES Refinery		Date Finish: 4/18/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Interval: 1.0-1.5', 4.5-5.0' & 6.5-7.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	Brown fine-to-coarse sandy FILL with some silt	
1			0.1		
	GPR1038-11-1.0-1.5		16.9		
2			8.9		
			5.4		
3			3.7		
			0.3		
4			1.3		
			0.8		
5	GPR1038-11-4.5-5.0		0.3		
			4.2	Black medium to fine SAND some fine gravel	
6			2.9		
			1.1		
7	GPR1038-11-6.5-7.0		5.4		
			12.9		Wet
8			10.1	Black fine to medium SAND some CLAY trace fine gravel	
			3.1		
9			0.8		
			0.5		
10			0.0		
				END OF BORING (10 ft.)	
11					
12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1039-01
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1039-01-SS01		3.5	0.0-2.0' Dark gray fine SAND and CLAY	
2			3.2		
3			8.0	2.0'-3.0' Brick material	
4			8.3	3.0'-5.0' Dark gray CLAY, little fine Sand	
5			2.5		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1039-02
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1039-02-SS01		2.6	0.0'-2.0' Medium brown fine SAND	
2			2.7		
3			3.1	2.0'-5.0' Dark gray CLAY, little fine Sand	
4			8.0		
5			7.9		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1039-03
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 3.0'-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1039-03-SS01		3.0	0.0'-4.0' Medium brown medium to coarse SAND, saturated	
2			3.7		
3			3.2		
4			5.5		
5			4.6	4.0'-5.0' Dark gray CLAY, some fine Sand	
6				**END OF BORING (5 ft.)**	
7					
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13					
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19					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1039-04
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1039-04-SS01		3.4	0.0'-1.0' Dark gray fine SAND and medium angular GRAVEL	
2			3.0	1.0'-5.0' Dark gray CLAY, little fine Sand	
3			7.0		
4			5.7		
5			3.6		
6				**END OF BORING (5 ft.)**	
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1039-05
		Page 1 of 1
Client: PESRM		Date Start: 6/16/2023
Project Name: PES Refinery		Date Finish: 6/16/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Ron Barber	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Chris Olsen	Sample Interval: 2.5'-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
1	GPR-1039-05-SS01		2.5	0.0'-3.0' Dark gray CLAY and fine SAND	
2			12.1		
3			13.6		
4			6.3	3.0'-4.0' Brick material	
5			3.4	4.0'-5.0' Dark gray CLAY and fine SAND	
6				**END OF BORING (5 ft.)**	
7					
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11					
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24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-01
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			2.5		
			3.6		
5	GPR1047-01		4.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
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12					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-02
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			1.6		
2			2.4		
			1.8		
3			3.6		
			3.2		
4			4.1		
			4.7		
5	GPR1047-02		5.1		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
14					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-03
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.0		
4			2.1		
	GPR1047-03, Dup-54		3.5		
5			1.8		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
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19					
20					
21					
22					
23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-04
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			4.5		
3			5.2		
			3.6		
4			8.9		
			7.2		
5	GPR1047-04		12.4		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
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20					
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22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-06
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0'-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.3		
2			1.2		
			1.6		
3			4.2		
			1.8		
4			11.9		
	GPR1047-06		13.7		
5			12.6		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
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15					
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17					
18					
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20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1047-07
		Page 1 of 1
Client: PESRM		Date Start:12/08/2022
Project Name: PES Refinery		Date Finish: 12/08/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5'-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	
			0.0	0.0-5.0' Brown fine-to-coarse sandy FILL with some silt	
1			0.0		
			0.0		
2			0.0		
			1.5		
3			4.2		
			3.7		
4			7.2		
			8.0		
5	GPR1047-07		8.6		
				END OF BORING (5 ft.)	
6					
7					
8					
9					
10					
11					
12					
13					
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17					
18					
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20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: TG06-MW01
		Page 1 of 1
Client: PESRM		Date Start: 6/11/2024
Project Name: PES Refinery		Date Finish: 6/11/2024
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller: Joe Flannery	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 15.0'
Logged By: Athena Lakrout	Sample Intervals: 1.5'-2.0' 6.5'-7.0' & 7.0'-7.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			3.3	Concrete/gravel	
1			5.6	Brown sand and clay with rocks	
			9		
2	TG06-MW01-1.5-2.0		236.1		
			91.6		
3			34		
			26.2		
4			1.4	Gravel with black clay and mica with pieces of wood	
			0.3		
5			0		
			3.1	Rocks and brown sandy clay	
6			25.2		
			13.8		
7	TG06-MW01-6.5-7.0		189.9		
	TG06-MW01-7.0-7.5		3.9	Gravel	Water
8			0.8	Black clay	
			2.7		
9			1		
			0.3		
10			0		
			1.5	Black clay with gravel	
11			0.5		
			3.1		
12			1.4		
			2.7		
13			2.6		
			4.8		
14			1		
			5		
15			1.2		
				END OF BORING (15 ft.)	
16					
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18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: TG06-MW02/GPR-276-12
		Page 1 of 1
Client: PESRM		Date Start:11/30/2023
Project Name: PES Refinery		Date Finish: 11/30/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'; 6.0'-6.5'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	TG06-MW02-0.5-1.0		3.7	Brown/gray, med-coarse sandy fill	
			0.6		
2			1.2		
			0.9		
3	TG06-MW02-2.0-2.5		7.5		
			1.1		
4			1.4		
			1.7		
5			1.9	Dark gray/black, silty sand	Wet
			1.8		
6			1.3		
			3.6		
7	TG06-MW02-6.0-6.5		18.2		
			6.8		
8			7.7		
			4.2		
9			2.1		
			2.5		
10	TG06-MW02-9.5-10.0		2.1		
			5.3		
11				**END OF BORING (10 ft.)**	
12					
13					
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: TG06-MW03/GPR-284-15
		Page 1 of 1
Client: PESRM		Date Start:12/01/2023
Project Name: PES Refinery		Date Finish: 12/01/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 9.0'-9.5'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			1.4		
1	TG06-MW03-0.5-1.0		1.6	Brown/black, med-coarse sandy fill with red brick	
			4.3		
2			1.1		Wet
			2.8		
3			1.4		
			1.5		
4			3.0		
			3.8		
5			6.2		
			4.1		
6			5.2	Dark gray/black, silty sand	
			7.7		
7			4.9		
			2.5		
8			4.2		
			6.9		
9			5.1		
	TG06-MW03-9.0-9.5		9.0		
10	TG06-MW03-9.5-10.0		4.6		
				END OF BORING (10 ft.)	
11					
12					
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20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: TG06-MW04/GPR-285-07
		Page 1 of 1
Client: PESRM		Date Start:11/29/2023
Project Name: PES Refinery		Date Finish: 11/29/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 10.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'; 5.0'-5.5'; 9.5'-10.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
			0.3		Wet
1	TG06-MW04-0.5-1.0		0.2	Brown, med-coarse sandy fill	
			1.3		
2			1.5		
	TG06-MW04-2.0-2.5		238		Wet
3			122.2		
			3.4		
4			2.1		
			2.2		
5			1.8		
	TG06-MW04-5.0-5.5		32.4		
6			7.2		
			2.6	Dark gray/black, silty sand	
7			1.2		
			0.5		
8			0.7		
			2.8		
9			1.5		
			1.2		
10	TG06-MW04-9.5-10.0		1.1		
11				**END OF BORING (10 ft.)**	
12					
13					
14					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: TG06-MW05/GPR-1038-04
		Page 1 of 1
Client: PESRM		Date Start:12/04/2023
Project Name: PES Refinery		Date Finish: 12/04/2023
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: MB Drilling		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Nick Daigle	Sample Intervals: 0.5'-1.0'; 2.0'-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	TG06-MW05-0.5-1.0		1.3 5.7	Brown/black, coarse sandy fill	
2			28.3 31.2		
3	TG06-MW05-2.0-2.5		65.2 42.5	Dark gray/black, silty sand	Wet
4			21.1 11.2		
5			6.5 3.6		
6				**END OF BORING (5 ft.)**	
7					
8					
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24					
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RANSOM Consulting, LLC

MONITORING WELL LOG

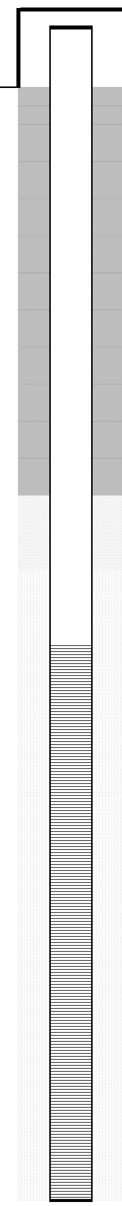
Project: PESRM - Tank Group 06	Well Permit Number:	Boring/Well No.: TG06- MW-01
Project No.: 200.00135	Drilling Co.: MB Drilling, LLC	Lock No.: Master Lock 0410
Site Location: 3144 Passyunk Ave, Philadelphia, PA	Driller: Justin Verba	Start Date: 2/12/2024
Scientist: Nick Daigle	Drilling Method: Geoprobe Direct Push	Date Complete: 2/12/2024
Ground Elev.:	Drilling Equip: 7822 DT	Total Boring Depth: 11 feet
Top of Casing Elev.:	Static Water (below TOC): 5.75 feet	Product Thickness: N/A

Remarks: Wells installed direct push using pre-pack screens and therefore no recovered soil samples for classification and no PID readings.

GEOLOGIC LOG	Depth (ft.)	Blow/6 inches	Recovery (ft.)	PID (ppm)	Sample

End of Borehole at 11'

AS-BUILT WELL SCHEMATIC



4 ft steel riser w/ locking cap

Locking plug

Well Material: Schedule 40 PVC

Well Casing diameter: 2-inches

Well casing length: 3 feet

Grout length: 0.5 feet

Fine Seal pack length: 0.5 feet

Fine Seal pack size: No. 00 sand

Gravel pack length: 10 feet

Gravel pack size: No. 1 sand

Well Screen Material: Sch. 40 PVC

Well Screen diameter: 2-inches

Well screen length: 10 feet

Well slot size: 0.010 slot

Total Well Depth: 11.0 feet

Bore hole diameter: 4.5 inches

Ransom Consulting, LLC

MONITORING WELL LOG

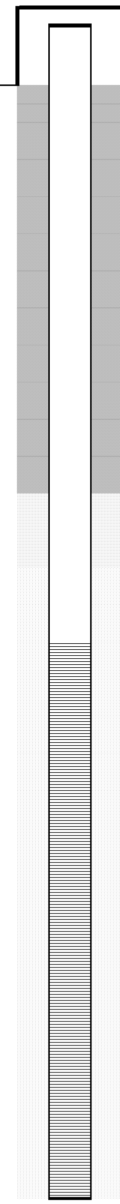
Project: PESRM - Tank Group 06	Well Permit Number:	Boring/Well No.: TG06- MW-02
Project No.: 200.00135	Drilling Co.: MB Drilling, LLC	Lock No.: Master Lock 0410
Site Location: 3144 Passyunk Ave, Philadelphia, PA	Driller: Justin Verba	Start Date: 2/12/2024
Scientist: Nick Daigle	Drilling Method: Geoprobe Direct Push	Date Complete: 2/12/2024
Ground Elev.:	Drilling Equip: 7822 DT	Total Boring Depth: 11 feet
Top of Casing Elev.:	Static Water (below TOC): 4.92 feet	Product Thickness: N/A

Remarks: Wells installed direct push using pre-pack screens and therefore no recovered soil samples for classification and no PID readings.

GEOLOGIC LOG	Depth (ft.)	Blow/6 inches	Recovery (ft.)	PID (ppm)	Sample

End of Borehole at 11'

AS-BUILT WELL SCHEMATIC



4 ft steel riser w/ locking cap

Locking plug

Well Material: Schedule 40 PVC

Well Casing diameter: 2-inches

Well casing length: 3 feet

Grout length: 0.5 feet

Fine Seal pack length: 0.5 feet

Fine Seal pack size: No. 00 sand

Gravel pack length: 10 feet

Gravel pack size: No. 1 sand

Well Screen Material: Sch. 40 PVC

Well Screen diameter: 2-inches

Well screen length: 10 feet

Well slot size: 0.010 slot

Total Well Depth: 11.0 feet

Bore hole diameter: 4.5 inches

RANSOM Consulting, LLC

MONITORING WELL LOG

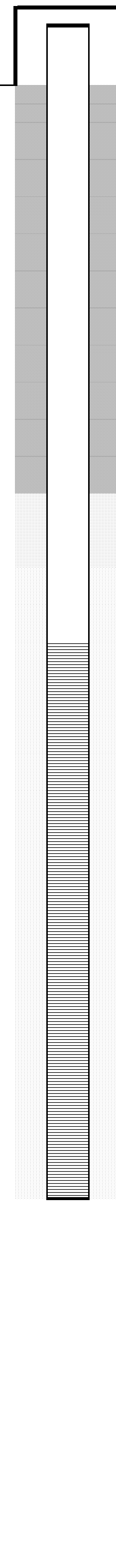
Project: PESRM - Tank Group 06	Well Permit Number:	Boring/Well No.: TG06- MW-03
Project No.: 200.00135	Drilling Co.: MB Drilling, LLC	Lock No.: Master Lock 0410
Site Location: 3144 Passyunk Ave, Philadelphia, PA	Driller: Justin Verba	Start Date: 12/1/2023
Scientist: Nick Daigle	Drilling Method: Geoprobe Direct Push	Date Complete: 12/1/2023
Ground Elev.:	Drilling Equip: 7822 DT	Total Boring Depth: 14.5 feet
Top of Casing Elev.:	Static Water (below TOC): 6.20 feet	Product Thickness: N/A

Remarks: Wells installed direct push using pre-pack screens and therefore no recovered soil samples for classification and no PID readings.

GEOLOGIC LOG	Depth (ft.)	Blow/6 inches	Recovery (ft.)	PID (ppm)	Sample

End of Borehole at 11'

AS-BUILT WELL SCHEMATIC



4 ft steel riser w/ locking cap

Locking plug

Well Material: Schedule 40 PVC

Well Casing diameter: 2-inches

Well casing length: 6.5 feet

Grout length: 2.5 feet

Fine Seal pack length: 2 feet

Fine Seal pack size: No. 00 sand

Gravel pack length: 10 feet

Gravel pack size: No. 1 sand

Well Screen Material: Sch. 40 PVC

Well Screen diameter: 2-inches

Well screen length: 10 feet

Well slot size: 0.010 slot

Total Well Depth: 14.5 feet

Bore hole diameter: 4.5 inches

RANSOM Consulting, LLC

MONITORING WELL LOG

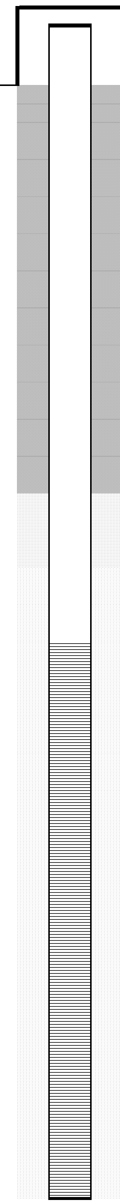
Project: PESRM - Tank Group 06	Well Permit Number:	Boring/Well No.: TG06- MW-04
Project No.: 200.00135	Drilling Co.: MB Drilling, LLC	Lock No.: Master Lock 0410
Site Location: 3144 Passyunk Ave, Philadelphia, PA	Driller: Justin Verba	Start Date: 11/29/2023
Scientist: Nick Daigle	Drilling Method: Geoprobe Direct Push	Date Complete: 11/29/2023
Ground Elev.:	Drilling Equip: 7822 DT	Total Boring Depth: 15 feet
Top of Casing Elev.:	Static Water (below TOC): 6.17 feet	Product Thickness: N/A

Remarks: Wells installed direct push using pre-pack screens and therefore no recovered soil samples for classification and no PID readings.

GEOLOGIC LOG	Depth (ft.)	Blow/6 inches	Recovery (ft.)	PID (ppm)	Sample

End of Borehole at 11'

AS-BUILT WELL SCHEMATIC



RANSOM Consulting, LLC

MONITORING WELL LOG

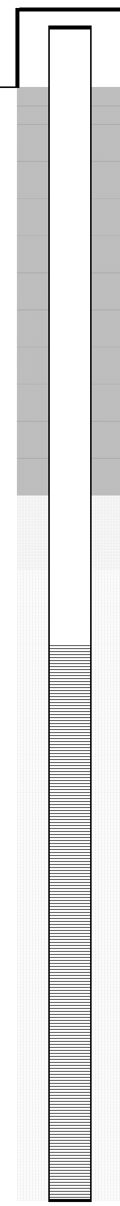
Project: PESRM - Tank Group 06	Well Permit Number:	Boring/Well No.: TG06- MW-05
Project No.: 200.00135	Drilling Co.: MB Drilling, LLC	Lock No.: Master Lock 0410
Site Location: 3144 Passyunk Ave, Philadelphia, PA	Driller: Justin Verba	Start Date: 11/30/2023
Scientist: Nick Daigle	Drilling Method: Geoprobe Direct Push	Date Complete: 11/30/2023
Ground Elev.:	Drilling Equip: 7822 DT	Total Boring Depth: 15 feet
Top of Casing Elev.:	Static Water (below TOC): 5.97 feet	Product Thickness: N/A

Remarks: Wells installed direct push using pre-pack screens and therefore no recovered soil samples for classification and no PID readings.

GEOLOGIC LOG	Depth (ft.)	Blow/6 inches	Recovery (ft.)	PID (ppm)	Sample

End of Borehole at 11'

AS-BUILT WELL SCHEMATIC



4 ft steel riser w/ locking cap

Locking plug

Well Material: Schedule 40 PVC

Well Casing diameter: 2-inches

Well casing length: 7 feet

Grout length: 3 feet

Fine Seal pack length: 2 feet

Fine Seal pack size: No. 00 sand

Gravel pack length: 10 feet

Gravel pack size: No. 1 sand

Well Screen Material: Sch. 40 PVC

Well Screen diameter: 2-inches

Well screen length: 10 feet

Well slot size: 0.010 slot

Total Well Depth: 15 feet

Bore hole diameter: 4.5 inches

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-01
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR494-01		10.2 21.3	0-5.0 Brown silty FILL coarse SAND	
2			19.2 15.4		
3			16.7 55.6		
4			89.0 110.2		
5			156.3 201.2		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-02
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.5-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR494-02		60.9 82.9 122.3 160.2 122.3 125.7 129.2	0-3.5 Brown silty FILL with GRAVEL	
2					
3					
4			83.7	3.5-5.0 Coarse SAND with SILT	
5			87.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-03
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			1.0 2.3	0-3.5 Brown sandy FILL with GRAVEL	
2			5.7 18.1		
3			25.6 39.2		
4			45.6 30.4	3.5-5.0 Brown coarse SAND with SILT	
5	GPR494-03		102.2 90.4		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-04
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.0-2.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR494-04		25.2 27.1	0-2.5 Coarse sandy FILL with GRAVEL	
2			29.3 55.8		
3			45.5 60.5	2.5-5.0 Coarse SAND with SILT	
4			15.3 12.2		
5			9.6 3.2		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-05
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			9.2 10.3	0-2.5 Sandy FILL with SILT	
2			28.2 50.2		
3			62.3 185.6	2.5-5.0 Coarse SAND with SILT	
4			190.3 172.3		
5	GPR494-05		184.1 292.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-06
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			9.2 10.3	0-3.5 Brown sandy FILL with GRAVEL	
2			28.2 50.2		
3			62.3 185.6		
4			190.3 172.3	3.5-5.0 Brown silty FILL with coarse SAND	
5	GPR494-06		184.1 292.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-06
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			10.9 20.2	0-4.0 Brown sandy FILL with GRAVEL	
2			60.7 64.8		
3			53.6 126.3		
4			285.2 398.6		
5	GPR494-06		640.5 822.3	4.0-5.0 Brown silty FILL with coarse SAND	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-07
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			9.3 10.2	0-4.0 Brown silty FILL with GRAVEL	
2			17.8 25.2		
3			50.2 65.0		
4			73.9 72.0		
5	GPR494-07		74.3 86.7	4.0-5.0 Brown coarse SAND	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-08
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR494-08		17.8	0-5.0 Brown sandy FILL with SILT	
			16.2		
2			23.4		
			25.6		
3			24.7		
			25.2		
4			28.7		
			20.5		
5			19.8		
			20.2		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-494-09
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR494-09	4.75	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0' Brown sandy FILL (bricks)	
2					
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6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-01
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPU767-01		0.0 0.0	0-5.0 Brown sandy FILL with GRAVEL	
2			0.0 0.0		
3			0.0 0.0		
4			0.0 0.0		
5			0.0 0.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-02
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			10.2 26.1	0-4.0 Brown silty FILL with coarse SAND	
2			23.8 29.8		
3			40.2 45.6		
4			65.7 65.7		
5	GPU767-02		70.2 89.3	0-5.0 Brown/grey SILT with GRAVEL	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-03
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.2 0.3	0-4.0 Brown coarse SAND with GRAVEL	
2			0.6 10.3		
3			29.3 20.4		
4			17.8 35.6		
5	GPU767-03		45.7 50.1	0-5.0 Brown coarse SAND with SILT	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-04
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			19.2 21.7	0-3.0 Brown/gray silty FILL	
2			22.0 25.6		
3			38.3 35.8		
4			40.2 41.2	3.0-5.0 Black/brown coarse SAND	
5	GPU767-04		45.9 49.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-05
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.7	0-3.5 Brown SILT with GRAVEL	
			0.2		
2			15.2		
			20.5		
3			25.4		
			16.3		
4			90.2		
			152.3	3.5-5.0 Brown SILT with coarse SAND and GRAVEL	
5	GPU767-05		163.2		
			132.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-06
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPU767-06		0.0 0.0	0-3.5 Brown sandy FILL with SILT and GRAVEL	
2			0.0 0.0		
3			0.0 0.0		
4			0.0 0.0		
5			0.0 0.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPU-767-07
		Page 1 of 1
Client: Hilco		Date Start: 08/15/2022
Project Name: PES Refinery		Date Finish: 08/15/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPU767-07		0.0 0.0	0-3.5 Brown sandy FILL with SILT and GRAVEL	
2			0.0 0.0		
3			0.0 0.0		
4			0.0 0.0		
5			0.0 0.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-01
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT	
			0.0		
2			0.0		
			0.0		
3		4.50	0.0		
			13.2		
4			509.1		
			1297		
5	GPR790-01		1301	4.0-5.0 Brown/black SILT	
			1906		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-02
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		3.00	0.0		
			589.1		
4			689.2		
			1402		
5	GPR790-02		1306	4.0-5.0 Brown/black SILT	
			1709		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-03
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		3.50	0.0		
			0.0		
4			187.9		
			1908		
5	GPR790-03		2029	4.0-5.0 Brown/black SILT	
			3061		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-04
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR790-04	2.50	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown/gray sandy SILT with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-05
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		3.00	0.0		
			0.0		
4			0.0		
			0.0		
5	GPR790-05		1798	4.0-5.0 Brown/black Silt	
			3931		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-06
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-3.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			69.3		
4			1451	3.0-4.0 Brown/gray sandy SILT	
			1494		
5	GPR790-06		1606	4.0-5.0 Brown/black sandy SILT	
			3098		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-790-07
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-3.0 Brown/gray sandy SILT	
			0.0		
2			0.0		
			0.0		
3		3.00	0.0		
			0.0		
4			0.0	3.0-5.0 Brown/black sandy SILT	
			1406		
5	GPR790-07		3941		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-01
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-3.0 Brown SILT	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			168.3		
4			1318	3.0-4.0 Grey sandy SILT with some gravel	
			1409		
5	GPR791-01		1606	4.0-5.0 Brown/black SILT	
			3092		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-02
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-5.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		3.50	0.0		
			0.0		
4	GPR791-02		129.2		
			901.2		
5			193.3		
			201.5		
6				**END OF BORING (5 ft.)**	
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-03
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-5.0 Brown sandy SILT	
			0.0		
2			0.0		
			2.8		
3		4.50	1.2	2.0-5.0 Brown/gray SILT with some GRAVEL	
			14.8		
4			71.3		
			106.9		
5	GPR791-03		1303		
			110.8		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-04
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR791-04	3.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown/gray sandy SILT with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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21					
22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-05
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR791-05	3.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown/gray sandy SILT with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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11					
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23					
24					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-06
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR791-06	2.50	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown/gray sandy SILT with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-07
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR791-07	4.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-1.0 Red crushed STONE 4.0-5.0 Brown SAND with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-791-08
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-4.0 Brown sandy SILT with little GRAVEL	
2			0.0 0.0		
3		3.00	0.0 0.0		
4			0.0 0.0		
5	GPR791-08		0.0 0.0	4.0-5.0 Brown/black SILT	
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-01
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown/gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		3.50	13.2		
			100.7		
4			784.3		
			1422		
5	GPR792-01		1662	4.0-5.0 Brown/black fine to course SAND	
			1301		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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22					
23					
24					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-02
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.0 Brown sandy SILT	
			0.0		
2			0.0		
			0.0		
3		2.50	0.0	2.0-5.0 Gray/dak gray sandy SILT	
			0.0		
4			168.1		
			1308		
5	GPR792-02		1924		
			1092		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
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18					
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20					
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23					
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25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-03
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.5 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			0.0	2.5-5.0 Brown/gray fine SAND	
4			1307		
			1624		
5	GPR792-03		1794		
			2094		
6				**END OF BORING (5 ft.)**	
7					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-04
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.5 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			6.9	2.5-5.0 Brown/gray fine SAND	
4			75.3		
			74.2		
5	GPR792-04		1619		
			2931		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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12					
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20					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-05
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-3.0 Brown sandy SILT	
			0.0		
2			0.0		
			0.0		
3		4.00	14.7		
			798.3		
4			1119.0	2.5-5.0 Brown/black fine to coarse SAND	
			1418.0		
5	GPR792-05		1906		
			901.3		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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20					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-06
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-5.0 Brown sandy SILT	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			2.6		
4			14.1		
			13.6		
5	GPR792-06		179.2		
			692.1		
6				**END OF BORING (5 ft.)**	
7					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-792-07
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-3.0 Gray fine to coarse SAND	
2			0.0 0.0		
3		4.00	0.0 2.6		
4	GPR792-07		14.1 13.6	3.0-4.0 Gray fine to coarse SAND with GRAVEL	
5			179.2 692.1	4.0-5.0 Brown/black SILT with some fine sand	
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-01
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.0 Black/gray SILT and GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0	2.0-5.0 Brown/gray sandy SILT	
			18.6		
4			150.2		
			301.8		
5	GPR793-01		595.1		
			482.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-02
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.0 Black sandy SILT	
			0.0		
2			0.0		
			0.0		
3		3.50	13.6	2.0-5.0 Gray fine to coarse SAND	
			180.2		
4			522.1		
			562.1		
5	GPR793-02		931.2		
			418.1		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-03
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.5 Gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			19.8		
3		4.00	64.2		
			1495	2.5-5.0 Dark gray sandy SILT with some GRAVEL	
4			1394		
			5961		
5	GPR793-03		7841		
			15000		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-04
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-2.5 Gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			191.3	2.5-5.0 Dark gray sandy SILT with some GRAVEL	
4			2001		
			1609		
5	GPR793-04		13000		
			15000		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-05
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-1.0 Brown SILT	
2			0.0 0.0	1.0-5.0 Gray fine to coarse SAND and GRAVEL	
3		3.50	0.0 0.0		
4			13.2 29.6		
5	GPR793-05		280.3 594.1		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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12					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-793-06
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR793-05	4.00	0.0 0.0	0-1.0 Brown SILT	
2			0.0 18.5	1.0-5.0 Gray/black fine to coarse SAND and GRAVEL	
3			794.2 1416		
4			1309 2086		
5			1714 1300		
6				**END OF BORING (5 ft.)**	
7					
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20					
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23					
24					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-01
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			18.1		
3		4.00	76.4		
			922.3		
4			904.1		
			1218		
5	GPR794-01		1312	4.0-5.0 Brown/black fine to coarse SAND with little SILT	
			1694		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
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21					
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23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-02
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			0.0		
4			0.0		
			1211		
5	GPR794-02		1301	4.0-5.0 Brown/black fine to coarse SAND with little SILT	
			2094		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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12					
13					
14					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-03
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR794-03	2.50	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown sandy SILT with some GRAVEL	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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11					
12					
13					
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20					
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22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-04
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-1.0 Brown SILT	
2			0.0 0.0	1.0-3.5 Brown/gray sandy SILT with some GRAVEL	
3		4.50	14.1 64.3		
4			1419 1206	3.5-5.0 Tans/black fine to coarse SAND	
5	GPR794-04		1915 2841		
6				**END OF BORING (5 ft.)**	
7					
8					
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17					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-05
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown/gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			14.8		
4			98.3		
			1049		
5	GPR794-05		1924	4.0-5.0 Black fine to coarse SAND	
			3112		
6				**END OF BORING (5 ft.)**	
7					
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9					
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11					
12					
13					
14					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-06
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-1.0 Brown SILT	
			0.0		
2			0.0	1.0-3.5 Brown/gray sandy SILT with some GRAVEL	
			0.0		
3		3.50	0.0		
			73.9		
4			88		
			1921	3.5-5.0 Tans/black fine to coarse SAND	
5	GPR794-06		1816		
			4931		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-07
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown/gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			73.8		
4			641.2		
			774.3		
5	GPR794-07		1418	4.0-5.0 Black fine to coarse SAND	
			1934		
6				**END OF BORING (5 ft.)**	
7					
8					
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13					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-794-08
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0	0-4.0 Brown/gray sandy SILT with some GRAVEL	
			0.0		
2			0.0		
			0.0		
3		4.00	0.0		
			0.0		
4			1906		
			1398		
5	GPR794-08		1786	4.0-5.0 Black fine to coarse SAND	
			7942		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-01
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			126.2		
3		4.00	188.3		
			1011		
4			1406		
			1606		
5	GPR798-01		5012		4-5' Staining
			8003		
6				**END OF BORING (5 ft.)**	
7					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-02
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 0	0-5.0 Brown/black fine to coarse SAND	
2			0 0		
3		4.00	0 0		
4			0 0		3-5' Staining
5	GPR798-02		308.2 398.1		
6				**END OF BORING (5 ft.)**	
7					
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23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-03
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 0	0-5.0 Brown/black sandy SILT	
2			0 61.9		
3		4.50	691.3 171.1		
4			918.6 1329		
5	GPR798-03		3018 1208		4-5' Staining
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-04
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Black/brown sandy SILT	
			0		
2			0		
			0		
3		4.00	12.8		
			169.3		
4			1216		3-5' Staining
			1109		
5	GPR798-04		1506		
			1909		
6				**END OF BORING (5 ft.)**	
7					
8					
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11					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-05
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown/black sandy SILT	
			0		
2			0		
			0		
3		4.00	0		
			198.3		
4			1157		
			1262		
5	GPR798-05		1294		4-5' Staining
			1908		
6				**END OF BORING (5 ft.)**	
7					
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9					
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14					
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18					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-06
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT, some angular GRAVEL	
			0		
2			0		
			392.1		
3		3.00	689.3		
			1312		
4			1497		
			1706		3.5-5' Staining
5	GPR798-06		2091		
			1388		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
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23					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-798-07
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 0	0-5.0 Black/brown, fine to coarse SAND, some angular GRAVEL	
2			0 98.3		
3		4.50	106.9 1692		
4			1406 1693		
5	GPR798-07		1992 1908		4-5' Staining
6				**END OF BORING (5 ft.)**	
7					
8					
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10					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-01
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			0		
3		4.00	17.1		
			130.2		
4			208.1		3-5' Staining
			1402		
5	GPR799-01		1603		
			1410		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-02
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			0		
3		4.50	101.2		
			210.3		
4			904.1		3-5' Black staining
			1462		
5	GPR799-02		1802		
			1622		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-03
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			0		
3		4.00	0		
			0		
4			1302		3-5' Staining
			1213		
5	GPR799-03		3012		
			2031		
6				**END OF BORING (5 ft.)**	
7					
8					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-04
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			0		
3		4.50	601.2		
			848.2		
4			901.1		
			1503		
5	GPR799-04		1666		4-5' Staining
			1403		
6				**END OF BORING (5 ft.)**	
7					
8					
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10					
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18					
19					
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21					
22					
23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-05
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR799-05	4.50	0	0-5.0 Brown sandy SILT	2-5' Staining
			0		
2			13.1		
			1402		
3			1007		
			910.3		
4			905.1		
			1621		
5			1822		
			1594		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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18					
19					
20					
21					
22					
23					
24					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-06
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 0	0-5.0 Brown/black sandy SILT	
2			0 0		
3		4.50	0 1328		2-5' Staining
4			1552 1309		
5	GPR799-06		3061 3082		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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11					
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21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-799-07
		Page 1 of 1
Client: Hilco		Date Start: 07/18/2022
Project Name: PES Refinery		Date Finish: 07/18/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown sandy SILT	
			0		
2			0		
			0		
3		4.50	179.5		
			1306		
4			948.1		3-5' Staining
			1517		
5	GPR799-07		1403		
			1706		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
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20					
21					
22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-01
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-01	4.25	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0' Brown silty FILL with SAND	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-02
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-02	4.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0' Brown silty FILL with SAND (bricks)	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
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22					
23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-03
		Page 1 of 1
Client: Hilco		Date Start: 08/02/2022
Project Name: PES Refinery		Date Finish: 08/02/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-03	4.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0' Brown silty FILL with course SAND (bricks)	
2					
3					
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
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23					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-04
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-04	3.50		0-2.0 Brown sandy SILT	
2					
3				2.0-3.0 Red SANDSTONE	
4				3.0-5.0 Gray/black fine to coarse SAND	
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
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24					
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-05
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-05	4.00		0-2.0 Brown SILT with little red SANDSTONE	
2					
3				2.0-5.0 Gray/black fine to coarse SAND	
4					
5					
6				**END OF BORING (5 ft.)**	
7					
8					
9					
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12					
13					
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22					
23					
24					
25					

Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1088-06
		Page 1 of 1
Client: Hilco		Date Start: 08/03/2022
Project Name: PES Refinery		Date Finish: 08/03/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1088-06	2.50		0-4.0 Tan/brown sandy SILT with some GRAVEL	
2					
3					
4					
5				4.0-5.0 Black fine to coarse SAND	
6				**END OF BORING (5 ft.)**	
7					
8					
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10					
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16					
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1116-01
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-01	4.33	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-5.0 Brown SAND with SILT	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1116-02
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 0	0-4.0 Brown sandy FILL with SILT	
2			0 0		
3		4.17	0 0		
4			0 162.5		
5	GPR1116-02		109 100.6	4.0-5.0 Brown/gray SILT	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1116-03
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-5.0 Brown/gray SILT with coarse SAND	
			0		
2			0		
			0		
3		3.50	0		
			2		
4			19.2		
			25.6		
5	GPR1116-03		52.1		
			55.7		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1116-04
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.5 Brown silty FILL with SAND	
			0		
2			0		
			7.2		
3		4.25	0		
			0		
4			0		
			25.1	3.5-5.0 Brown fine SILT	
5	GPR1116-04		28.7		
			83.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-05
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-05		0.8 0.7	0-3.5 light brown sandy FILL with SILT and GRAVEL	
2			0.5 1.2		
3			20.2 18.7		
4			6.7 2.3	3.5-5.0 Dark brown SILT	
5			1.0 2.9		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-06
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-06		28.3 30.9	0-2.5 Brown silty FILL with SAND	
2			50.2 151.9		
3			274.8 301.9	2.5-5.0 Dark brown Silty FILL with GRAVEL	
4			575.7 322.0		
5			157.8 203.2		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-07
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			38.2 40.1	0-4.0 Brown sandy FILL with SILT	
2			12.9 60.4		
3			59.8 802.0		
4			88.9 110.7		
5	GPR1116-07		122.3 110.2	4.0-5.0 Dark brown SILT with GRAVEL	
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-08
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-08		102.3 249.8	0-2.5 Light brown sandy FILL with SILT	
2			333.8 730.2		
3			542.2 502.7	2.5-5.0 Dark brown SILT with fine SAND	
4			130.8 112.7		
5			6.3 12.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-09
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-09		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0-1.5 Brown course SAND with GRAVEL 1.5-4.0 Brown course SAND with FILL 4.0-5.0 Brown/gray SILT with course SAND	
2					
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6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-10
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-3.0 Light brown SILT with course SAND	
2			0.0 0.0		
3			0.0 0.0		
4	GPR1116-10		12.2 9.7	3.0-5.0 Brown/gray SILT with fine SAND	
5			8.5 5.6		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-11
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-11		0.0	0-3.5 Brown sandy Fill with GRAVEL	
			0.0		
2			0.0		
			0.0		
3			0.0		
			0.7		
4			11.2		
			0.1	3.5-5.0 Brown/gray SILT	
5			0.3		
			0.5		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-12
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 2.5-3.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-12		0.7 0.1	0-2.0 Brown SAND with GRAVEL	
2			21.2 30.5		
3			45.2 12.5	2.0-5.0 Brown course SAND	
4			8.8 17.3		
5			15.6 11.9		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-13
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.0-3.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0.0 0.0	0-3.0 Brown sandy FILL with SILT and GRAVEL	
2			0.0 0.0		
3			0.0 0.0		
4	GPR1116-13		0.0 0.0	3.0-5.0 Brown/black course SAND with SILT	
5			0.0 0.0		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-14
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-14		0.1 2.5	0-2.0 Brown course SAND	
2			7.4 10.7		
3			12.3 50.2	2.0-3.0 Light brown/orange SILT	
4			95.6 117.2	3.0-5.0 Brown/gray fine SAND	
5			82.6 50.3		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, I	Soil Boring Log	Boring No.: GPR-1116-15
		Page 1 of 1
Client: Hilco		Date Start: 08/01/2022
Project Name: PES Refinery		Date Finish: 08/01/2022
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 1.5-2.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1116-15		39.7 35.6	0-3.0 Brown sandy FILL with SILT	
2			48.9 322.1		
3			107.4 10.2		
4			14.8 15.6	3.0-5.0 Brown/gray SILT	
5			20.9 12.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-01
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Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0 118.2	0-5.0 Brown/gray SILT with fine SAND	
2			102.7 98.3		
3		3.50	309.4 330.2		
4			362.8 370.1		
5	GPR1117-01		370 372.4		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-02
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			10.2 18.3	0-5.0 Brown/gray SILT	
2			20.3 19.4		
3		4.17	29.8 39.2		
4			102.3 109.8		
5	GPR1117-02		110.5 101.8		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-03
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 3.5-4.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1	GPR1117-03	4.25	19.2 8.7 9.1 10.3 12.7 4.8 15.6 28.1 13 11.1	0-5.0 Brown/gray SILT	
2					
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5					
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-04
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.0 Brown coarse SAND with SILT	
			0		
2			0		
			0		
3		4.00	0		
			10.8		
4			15.2	3.0-5.0 Brown SILT with GRAVEL	
			10.7		
5	GPR1117-04		12.4		
			17.9		
6				**END OF BORING (5 ft.)**	
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Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-05
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.0-4.5'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.0 Brown silty FILL with GRAVEL	
			0		
2			0		
			0		
3		3.50	0		
			0		
4			26.7	3.0-5.0 Brown/gray SILT with fine SAND	
			32.6		
5	GPR1117-05		50.1		
			45.8		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-06
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.0 Light brown/tan silty FILL with SAND	
			0		
2			0		
			0		
3		3.75	0		
			0		
4			42.5	3.0-5.0 Brown/gray SILT with coarse SAND	
			44.8		
5	GPR1117-06		40.9		
			50.8		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-07
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.5 Tan FILL with SILT and GRAVEL	
			0		
2			0		
			0		
3		4.17	0		
			0		
4			0		
			24.5	3.5-5.0 Brown/gray SILT with coarse SAND	
5	GPR1117-07		40.8		
			72.8		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Ransom Consulting, LLC	Soil Boring Log	Boring No.: GPR-1117-08
		Page 1 of 1
Client: Hilco		Date Start: 07/18/22
Project Name: PES Refinery		Date Finish: 07/18/22
Project No.: 200.00135	Location: Philadephia, PA	Permit No.:
Drilling Contractor: TPI		Ground Elevation: N/A
Driller:	Drilling Method: Geoprobe	Datum: N/A
Hole Diameter: 2"	Sampling Method: Acetate Liner	Total Depth: 5.0'
Logged By: Tyler Short	Sample Interval: 4.5-5.0'	Hammer wt./fall: N/A

Depth (ft)	Sample No.	Recovery (Feet)	PID/FID (ppm)	Lithologic Description	Remarks
1			0	0-3.5 Brown silty FILL with GRAVEL	
			0		
2			0		
			0		
3		4.75	7.1		
			8		
4			15.9		
			29.8	3.5-5.0 Brown/gray SILT with coarse SAND	
5	GPR1117-08		57.9		
			60.2		
6				**END OF BORING (5 ft.)**	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring GPR793-03R **Sheet 1 of 1**

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 793**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, dark brown, damp, well graded, dense; fill, petroleum like odor	18.4	
							67.8	
							100.5	
							398.8	
							257.2	
	36/60		GPR793-03R-2.5-3.0				485.9	Sample GPR793-03R-2.5-3.0 from 2.5-3.0' bgs
			GPR793-03R-3.0-3.5				341.2	Sample GPR793-03R-3.0-3.5 from 3.0-3.5' bgs
						▼ Saturated at 3.5' bgs	358.6	
				SP		SAND, dark brown, wet, loose, poorly graded; fill, petroleum like odor	384.1	
							335.8	
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR791-09

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.0 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 791**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, brown, moist, dense, well graded; fill	23.5	Sample GPR791-09-0.0-0.5 from 0.0-0.5' bgs
			GPR791-09-0.0-0.5				3.8	
							11.6	
							3.4	
			GPR791-09-2.0-2.5				11.3	Sample GPR791-09-2.0-2.5 from 2.0-2.5' bgs
	32/60		GPR791-09-2.5-3.0				8.6	Sample GPR791-09-2.5-3.0 from 2.5-3.0' bgs
						▼ Saturated at 3.0' bgs	119.8	
							1540	
							1023	
							2512	
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR799-08

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 799**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, light brown, damp, dense, well graded; fill	5.3	
							10.0	
			GPR799-08-1.0-1.5				18.7	Sample GPR799-08-1.0-1.5 from 1.0-1.5' bgs
							14.8	
	36/60						2.3	
							11.5	
			GPR799-08-3.0-3.5	SP		SAND, black, moist, loose, poorly graded; fill, potential staining and petroleum like odor	272.1	Sample GPR799-08-3.0-3.5 from 3.0-3.5' bgs
						↓ Saturated at 3.5' bgs	565.6	
							492.8	
							174.0	
5						End of boring		
10								

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-04/ GPR798-04R **Sheet 1 of 1**

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **2.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 798**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, light brown, damp, dense, well graded; fill	717.8 1460 1002	
			TG07-MW-04-1.5-2.0	SP		SAND, black, damp, loose, poorly graded; fill, potential staining and petroleum like odor	4852	Sample TG07-MW-04-1.5-2.0 from 1.5-2.0' bgs
	48/60		TG07-MW-04-2.0-2.5			↓ Saturated at 2.5' bgs	15000 546.3 272.8 723.0 631.2 712.5	Sample TG07-MW-04-2.0-2.5 from 2.0-2.5' bgs
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR790-08

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.0 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 790**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			GPR796-08-0.0-0.5	SW		GRAVELLY SAND, brown, wet, loose, well graded; fill	10.2	Sample GPR796-08-0.0-0.5 from 0.0-0.5' bgs
							56.3	
							381.0	
							2912	
						Grades to black	11398	
	36/60						1367	
				SP		SAND, black, wet, loose, poorly graded; fill, saturated at 3.0' bgs; potential staining and petroleum like odor	333.7	
							330.7	
							666.4	
							174.2	
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR794-10

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.0 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 794**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, brown, damp, loose, well graded; fill	52.9	
							57.3	
							229.6	
			GPR794-10-1.5-2.0			Grades to black; potential staining and petroleum like odor	286.2	Sample GPR794-10-1.5-2.0 from 1.5-2.0' bgs
			GPR794-10-2.0-2.5				344.2	Sample GPR794-10-2.0-2.5 from 2.0-2.5' bgs
	36/60						222.5	
						Saturated at 3.0' bgs	203.3	
						Grades to tan	215.2	
							568.1	
						Grades to black	548.8	
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR794-09

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 794**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, light brown to gray, damp, dense, well graded; fill	40.7	
							88.9	
							274.0	
			GPR794-09-1.5-2.0				510.2	Sample GPR794-09-1.5-2.0 from 1.5-2.0' bgs
			GPR794-09-2.0-2.5 and GPR794-09-2.0-2.5D				9228	Sample GPR794-09-2.0-2.5 and GPR794-09-2.0-2.5D from 2.0-2.5' bgs
	42/60						5217	
			GPR794-09-3.0-3.5				6697	Sample GPR794-09-3.0-3.5 from 3.0-3.5' bgs
				SP		SAND, black, wet, loose, poorly graded; fill, saturated at 3.5' bgs, potential staining and petroleum like odor	15000	
							15000	
							10932	
5						End of boring		
10								

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring GPR792-03R **Sheet 1 of 1**

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **2.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 792**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, brown, damp, loose, poorly graded; fill	33.3	
							83.0	
							98.0	
			GPR792-03R-1.5-2.0				257.5	Sample GPR792-03R-1.5-2.0 from 1.5-2.0' bgs
			GPR792-03R-2.0-2.5				299.6	Sample GPR792-03R-2.0-2.5 from 2.0-2.5' bgs
	24/60					▼ Saturated at 2.5' bgs	395.0	
							504.9	
				SP		SAND, black, wet, loose, poorly graded; fill, potential staining and petroleum like odor	875.4	
							766.0	
							507.6	
5						End of boring		
10								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR1117-03R

Sheet 1 of 1

Date(s) Drilled **1/3/23**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **5 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **0.5 feet bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 1117**
Borehole Backfill **Soil Cuttings**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0	36/60		GPR1117-03R-0.0-0.5	SW		GRAVELLY SAND, brown, wet, dense, well graded; fill, Saturated 0.5' bgs	4.8	Sample GPR1117-03R-0.0-0.5 from 0.0-0.5' bgs
							3.7	
							3.1	
							4.1	
							3.0	
				ML		SILT, light brown, wet, firm, no dilatancy, no plasticity	1.8	
							1.1	
						Grades to dark brown	2.1	
							3.8	
							1.4	
5						End of boring		
10								

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-01/ GPR494-08R **Sheet 1 of 1**

Date(s) Drilled **12/21/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **13 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **1.72' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 494**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0			TG07-MW-01-0.0-0.5	GW		SANDY GRAVEL, brown, moist, loose, well graded; fill, saturated	0.1	Sample TG07-MW-01-0.0-0.5 from 0.0-0.5' bgs
							0.0	Bentonite
							0.0	#00 Sand
							0.0	2-inch Schedule 40 PVC
	36/60					grades to light brown	0.1	
							0.1	
							15.6	
							39.0	
							50.0	
5				SP		SAND, gray, wet, loose, poorly graded, fine grained; fill, Petroleum like odor	11.9	#01 Sand
							53.5	
							265.6	
	36/60						229.7	
							137.3	2-inch 0.010 Slotted Schedule 40 PVC Pre-pack
							86.2	
							66.0	
							74.7	
				ML		SILT, gray, wet, soft, no dilatancy, no plasticity	34.2	
							24.6	
10							9.8	
							10.2	
	12/36						15.7	
							10.2	
							9.0	
				CH		CLAY, gray, moist, soft, low dilatancy, high plasticity	5.9	
							0.8	
						End boring at 13.0' bgs		
15								

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring TG07-MW-02

Sheet 1 of 1

Date(s) Drilled **12/20/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **1.05' bgs**	Sampling Method(s)	Closest Tank **GPR 1117**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, black, moist, loose, well graded; fill	270.6	Concrete
							250.9	
							93.8	Bentonite
							286.9	#00 Sand
	36/60						202.0	2-inch Schedule 40 PVC
							193.0	
							87.2	
				ML		SANDY SILT, black, moist, no dilatancy, no plasticity; Saturated at 4.0' bgs, fill	56.2	#01 Sand
5				SP		SAND, black, wet, loose, poorly graded; wood debris, fill	9.0	
							2.4	
							11.3	
	36/60						4.5	
							2.8	
							11.0	2-inch 0.010 slotted Schedule 40 PVC pre-pack
				ML		SILT, black, wet, soft, no dilatancy, no plasticity	4.5	
							2.6	
							2.3	
							1.5	
10							1.2	
							8.0	
							38.7	
	54/60						5.0	
							5.7	
							1.1	
							2.3	
							2.7	
							1.7	
				CH		CLAY, gray, moist, soft, low dilatancy, high plasticity	0.8	
							0.7	
15						End boring at 15.0' bgs	0.8	

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-03/ GPR1116-08R **Sheet 1 of 1**

Date(s) Drilled **12/21/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **1.71' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 1116**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, black, moist, loose, well graded; fill	0.1	Concrete
							0.4	2-inch Schedule 40 PVC
							1.0	Bentonite
							2.5	#00 Sand
	42/60			SP		SAND, black, moist, loose, poorly graded, coarse grained; fill	36.8	
							2.4	
			TG07-MW-03-3.0-3.5; TG07-MW-03-3.0-3.5D				2.6	Sample TG07-MW-03-3.0-3.5 and TG07-MW-03-3.0-3.5D from 3.0-3.5' bgs
							1.1	
						Saturated at 4.0' bgs	242.2	#01 Sand
5				SW		GRAVELLY SAND, light brown, wet, loose, well graded; fill	84.3	
							0.2	
							0.2	
							0.1	
				ML		SILT, gray wet, soft, no dilatancy, no plasticity	0.1	
	54/60						15.6	2-inch 0.010 slotted Schedule 40 PVC pre-pack
							0.4	
							0.5	
							0.5	
							0.3	
10							0.6	
							1.0	
							8.0	
							6.5	
	24/60						5.3	
							0.6	
							0.5	
				CH		CLAY, gray, moist, soft, low dilatancy, high plasticity, fibrous	0.7	
							2.9	
							1.6	
15						End boring at 15.0' bgs	0.6	

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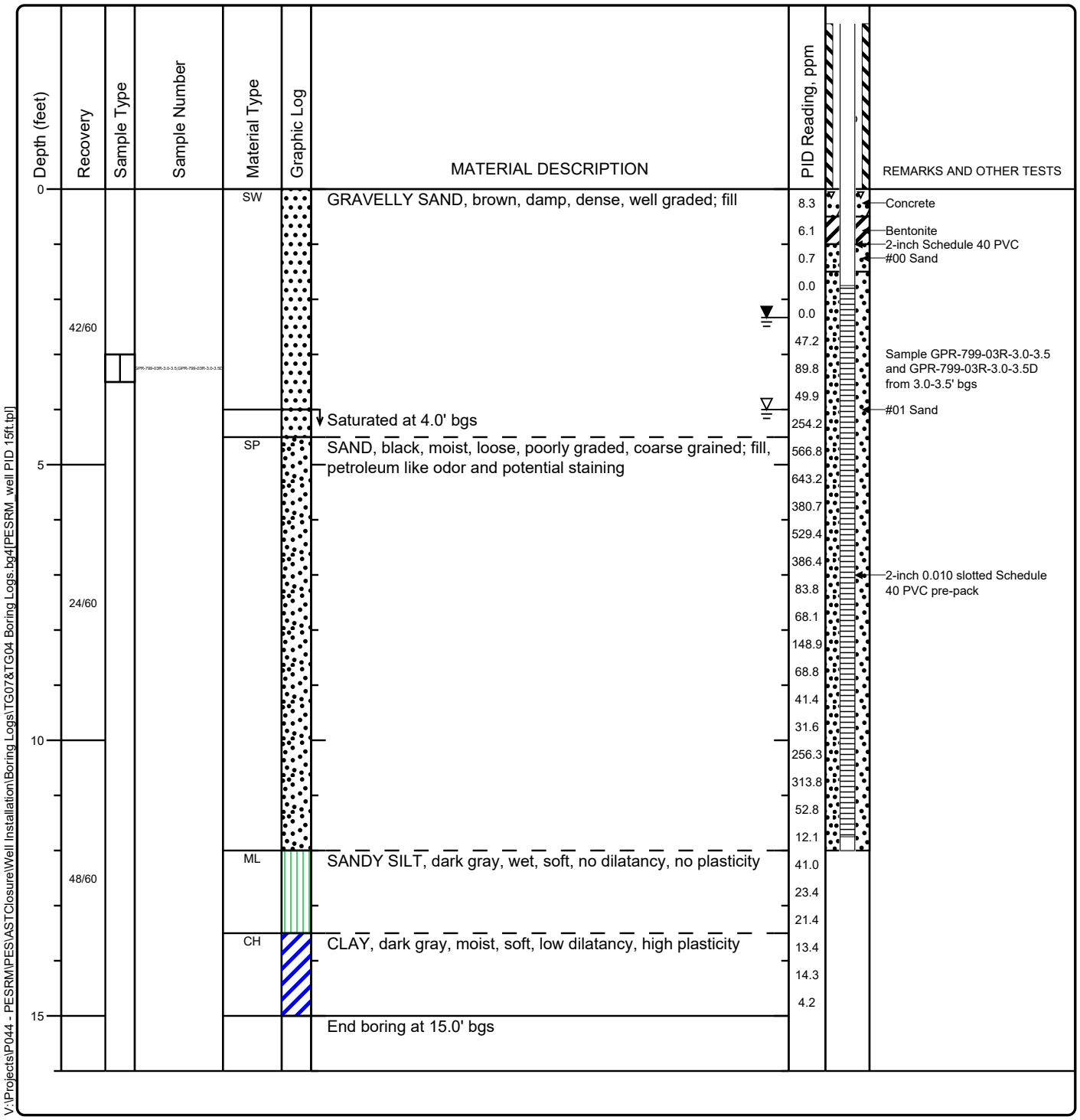
Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring GPR-799-03R

Sheet 1 of 1

Date(s) Drilled **12/21/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **2.33' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 799**
Borehole Backfill **N/A**	Location	



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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-05/ GPR790-05R **Sheet 1 of 1**

Date(s) Drilled **12/21/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **2.56' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 790**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, brown, moist, dense, well graded; fill, petroleum like odor	6.6 4.5 8.0 67.4 32.5 38.2 26.7 1647	Concrete Bentonite 2-inch Schedule 40 PVC #00 Sand #01 Sand
	30/60							
			TG07-MW-05-4.0-4.5	SM		SILTY SAND, black, damp, dense, poorly graded, fine grained; fill, petroleum like smell and potential staining	2273	Sample TG07-MW-05-4.0-4.5 from 4.0-4.5' bgs
5			TG07-MW-05-4.5-5.0	GW		SANDY GRAVEL, black, wet, well graded, coarse grained; fill, petroleum like odor and potential staining	1744 778.1 683.3 553.8 775.0 856.2 789.0 632.6 620.8 171.2 112.2	Sample TG07-MW-05-4.5-5.0 from 4.5-5.0' bgs 2-inch 0.010 slotted Schedule 40 PVC pre-pack
	12/60							
10				SP		SAND, dark gray, wet, loose, poorly graded; fill, petroleum like odor	306.5 132.9 230.2 197.1	
	36/60			ML		SANDY SILT, dark gray, wet, soft, no dilatancy, no plasticity; petroleum like odor	92.5 288.5 39.2 51.0 21.7 19.3	
15						End boring at 15.0' bgs		

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-06/ GPR791-04R **Sheet 1 of 1**

Date(s) Drilled **12/22/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **3.36' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 791**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				GW		SANDY GRAVEL, brown, damp, loose, well graded; fill, petroleum like odor	327.4	Concrete
							73.0	Bentonite
							27.3	2-inch Schedule 40 PVC
								#00 Sand
				Concrete		Concrete chips; fill	52.1	
	24/60						5.0	
							10.9	
				SW		GRAVELLY SAND, black, moist, loose, well graded; fill, petroleum like odor	4.4	#01 Sand
							989.4	
			TG07-MW-06-4.0-4.5				1584	Sample TG07-MW-06-4.0-4.5 from 4.0-4.5'
			TG07-MW-06-4.5-5.0				460.6	Sample TG07-MW-06-4.5-5.0 from 4.5-5.0'
5						Saturated at 5.0' bgs	10.5	
							2.3	
							4.0	
							35.9	
							23.8	2-inch 0.010 slotted Schedule 40 PVC pre-pack
	36/60						213.3	
							798.7	
							578.2	
							324.0	
10				SP		SAND, dark gray, wet, loose, poorly graded; fill, petroleum like odor	1680	
							49.9	
							152.7	
							93.2	
	42/60						374.9	
							195.2	
							121.0	
							289.1	
							256.3	
							166.5	
15						End boring at 15.0' bgs	151.3	

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Project: **PESRM AST Closure** Project Location: **3144 Passyunk Ave** Project Number: **P044.001.002**	Log of Boring TG07-MW-07/ GPR794-08R **Sheet 1 of 1**

Date(s) Drilled **12/21/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **2.43' bgs**	Sampling Method(s) **Grab**	Closest Tank **GPR 794**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, gray, damp, dense, well graded; fill, petroleum like odor	24.2 44.0 62.1 26.6 81.3 400.0	Concrete Bentonite 2-inch Schedule 40 PVC #00 Sand
	30/60						2023	#01 Sand
			TG07-MW-07-4.0-4.5	SM		SILTY SAND, black, moist, dense, poorly graded; petroleum like odor	2434 4842	Sample TG07-MW-07-4.0-4.5 from 4.0-4.5'
5			TG07-MW-07-4.5-5.0				1560	Sample TG07-MW-07-4.5-5.0 from 4.5-5.0'
				GW		SANDY GRAVEL, gray, wet, loose, well graded; fill, petroleum like odor	1206 4296 1196	
						Grades to black	2086	2-inch 0.010 slotted Schedule 40 PVC pre-pack
	60/60						744.0 4030 3045 2942 1659 684.2	
10				SP		SAND, black, wet, loose, poorly graded; fill, petroleum like odor	1762 2174	
				SM		SILTY SAND, dark gray, wet, loose, poorly graded; petroleum like odor	2778 499.4	
	60/60						779.2 740.8 223.4 133.9 94.5	
15						End boring at 15.0' bgs	53.2	

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Log of Boring TG07-MW-08

Sheet 1 of 1

Date(s) Drilled **12/22/22**	Logged By **S. Metzger**	Checked By **M. McDonald**
Drilling Method **Direct Push**	Drill Bit Size/Type **2"x5' macrocore**	Total Depth of Borehole **15 feet bgs**
Drill Rig Type **7822DT**	Drilling Contractor **TPI Environmental, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **4.90' bgs**	Sampling Method(s)	Closest Tank **GPU 768**
Borehole Backfill **N/A**	Location	

Depth (feet)	Recovery	Sample Type	Sample Number	Material Type	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				SW		GRAVELLY SAND, brown, damp, loose, well graded; fill	1.1	Concrete
							3.2	Bentonite
							11.9	2-inch Schedule 40 PVC
							10.2	#00 Sand
	36/60						1.2	
							1.7	
							3.4	#01 Sand
							96.8	
				SP		SAND, black, wet, loose, poorly graded; fill, petroleum like odor	190.0	
5							147.8	
							131.1	
							203.3	
							69.8	
							44.4	2-inch 0.010 slotted Schedule 40 PVC pre-pack
	42/60					wood debris	45.0	
							32.8	
10							20.1	
							2.2	
							50.2	
							0.2	
	36/60						0.6	
							8.1	
							8.1	
							8.7	
							4.3	
				CH		CLAY, dark gray, moist, soft, low dilatancy, high plasticity	2.0	
15						End boring at 15.0' bgs	1.3	

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Project: **PESRM AST Closure**
Project Location: **3144 Passyunk Ave**
Project Number: **P044.001.002**

Key to Log of Boring
Sheet 1 of 1

1 Depth (feet)	2 Recovery	3 Sample Type	4 Sample Number	5 Material Type	6 Graphic Log	7 MATERIAL DESCRIPTION	8 PID Reading, ppm	9 Well Log	10 REMARKS AND OTHER TESTS

COLUMN DESCRIPTIONS

1. Depth (feet): Depth in feet below the ground surface.
2. Recovery : Percent Recovery
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. Material Type: Type of material encountered.
6. Graphic Log: Graphic depiction of the subsurface material encountered.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
9. Well Log: Graphical representation of well installed upon completion of drilling and sampling.
10. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Bentonite
Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)
Portland Cement Concrete
Poorly graded SAND (SP)
Well graded SAND (SW)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler
Bulk Sample
3-inch-OD California w/ brass rings
CME Sampler
Grab Sample
2.5-inch-OD Modified California w/ brass liners
Pitcher Sample
2-inch-OD unlined split spoon (SPT)
Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)
Water level (after waiting, AW)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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Figure B-1

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 1025
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 1040
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 835
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

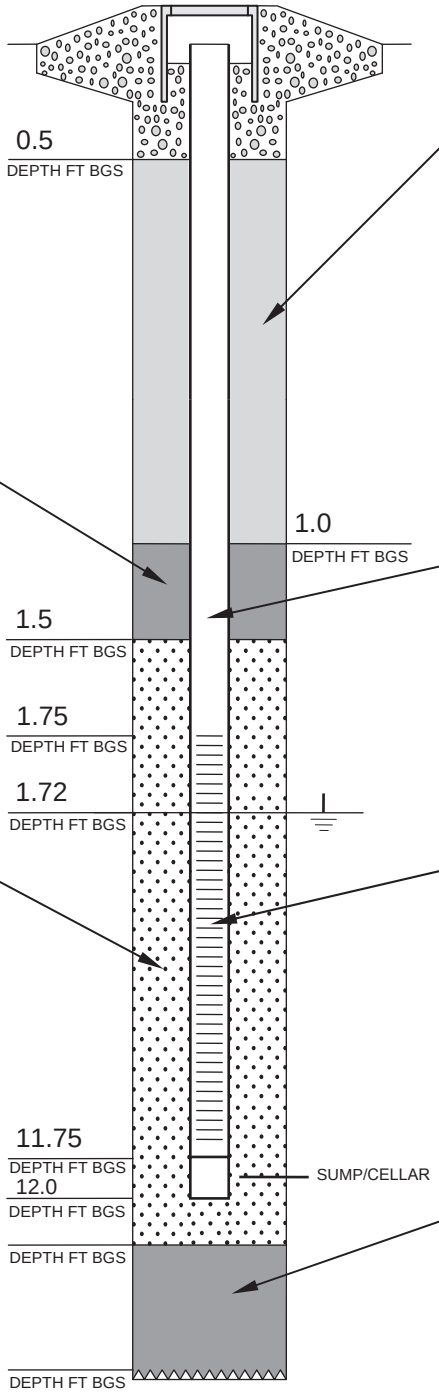
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-01
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 1.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 745
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 810
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 1418
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

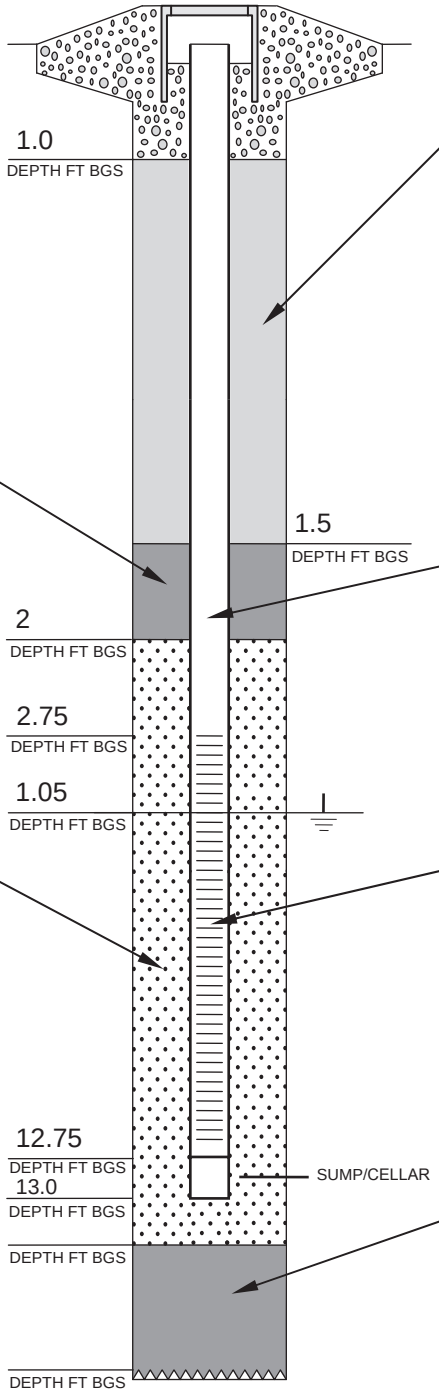
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-02
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 13.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 900
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 920
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 930
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

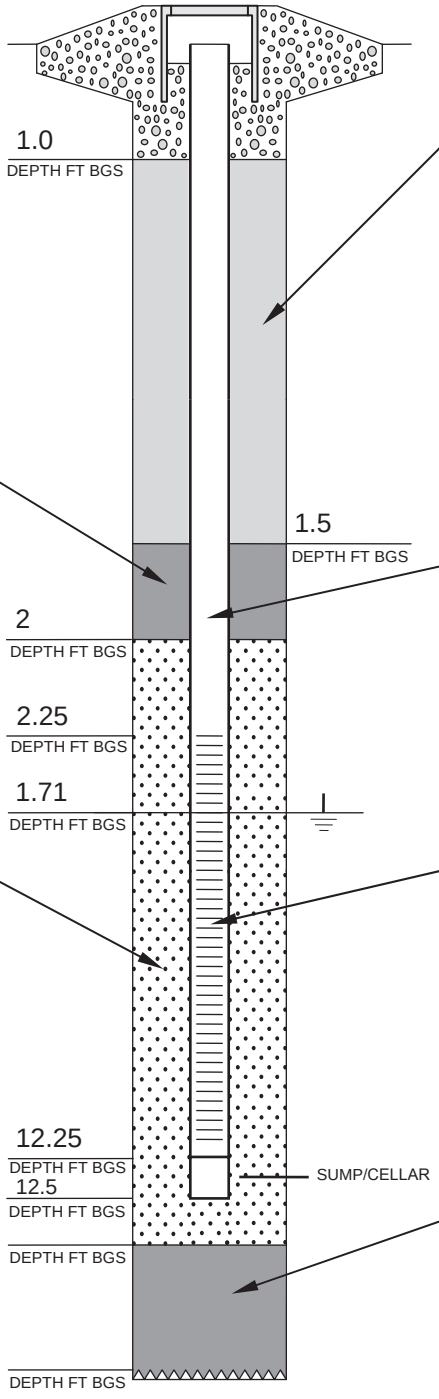
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-03
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.5'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 1432
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 1452
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 1215
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

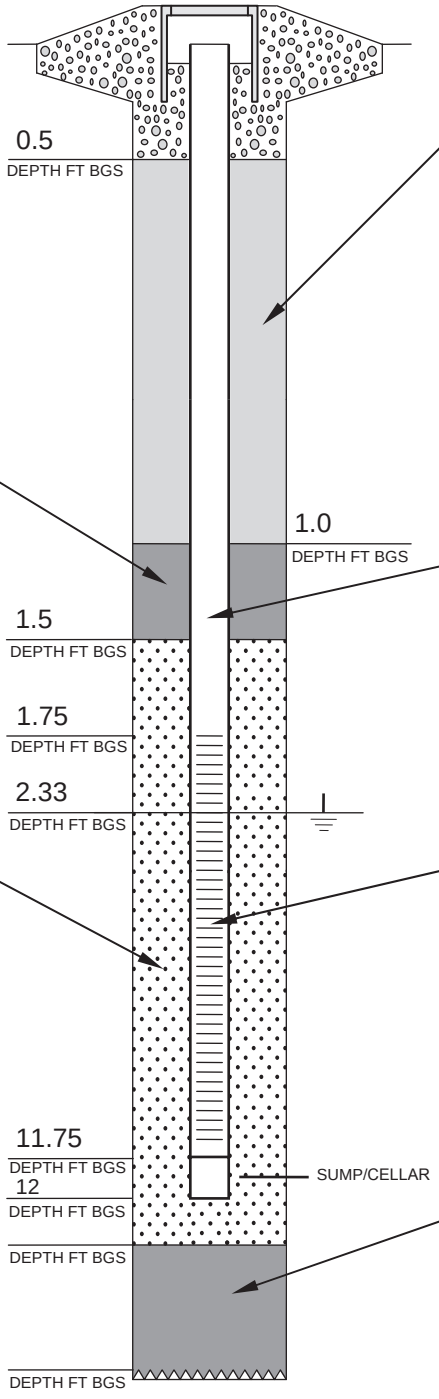
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-04
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 1319
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 1325
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 1245
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

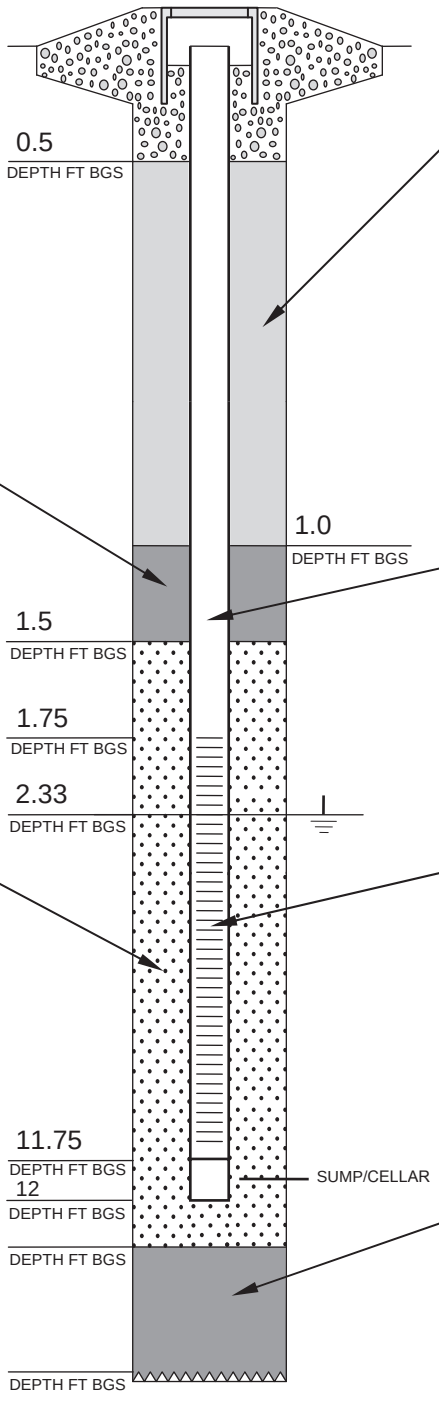
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-05
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/22/22 TIME 828
WELL INSTALLATION BEGAN:
DATE 12/22/22 TIME 840
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 1149
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

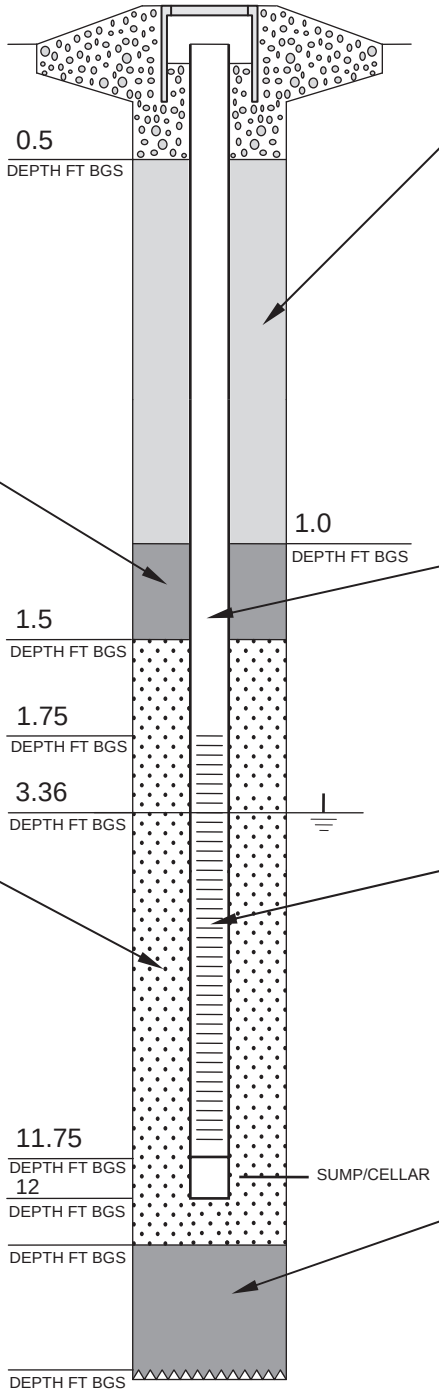
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-06
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/21/22 TIME 1214
WELL INSTALLATION BEGAN:
DATE 12/21/22 TIME 1230
WELL COMPLETION FINISHED:
DATE 12/21/22 TIME 1259
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

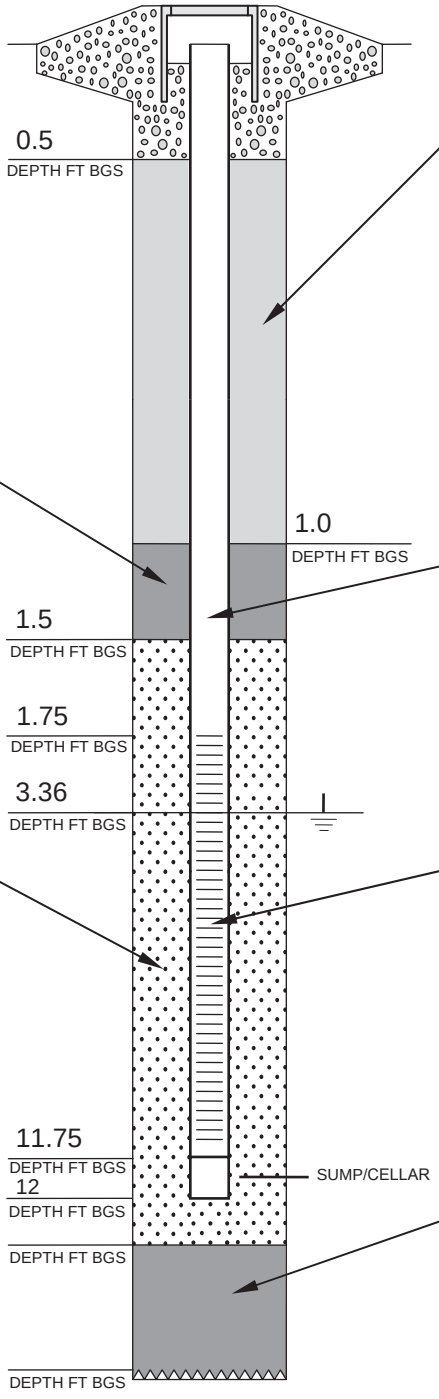
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-07
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

MONITORING WELL COMPLETION RECORD

DRILLING INFORMATION

DRILLING BEGAN:
DATE 12/22/22 TIME 940
WELL INSTALLATION BEGAN:
DATE 12/22/22 TIME 1000
WELL COMPLETION FINISHED:
DATE 12/22/22 TIME 1120
DRILLING CO. TPI Environmental
DRILLER B. Frace
LICENSE
DRILL RIG 7822DT
DRILLING METHOD:
☐ HOLLOW STEM AUGER
☐ SONIC
☑ OTHER: Direct Push
DIAMETER OF AUGERS:
ID 3.0" OD

Choker Sand

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☐ PELLETS, SIZE
☐ CHIPS, SIZE
☑ #00 Sand
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED
☑ POURED ☐ TREMIE
AMOUNT OF WATER USED

FILTER PACK

AMOUNT CALCULATED
AMOUNT USED 0.25 bags (12.5 lbs)
☑ SAND, SIZE #1 Sand
☐ FORMATION COLLAPSE:
FROM TO
PRODUCT Superior Quartz
MFG. BY Filpro
METHOD INSTALLED:
☑ POURED ☐ TREMIE

SURVEY INFORMATION

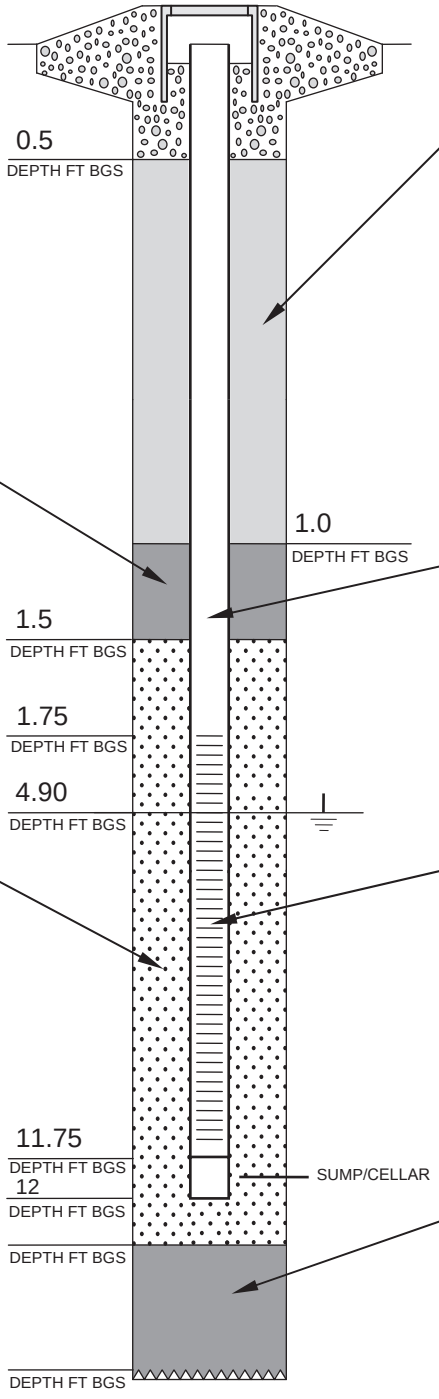
TOC ELEVATION
GROUND ELEVATION
NORTHING COORD.
EASTING COORD.
DATE SURVEYED
SURVEY CO.
TOC MEASURING POINT:

CENTRALIZERS USED?

☐ YES ☑ NO
CENTRALIZER DEPTHS:

SURFACE COMPLETION

☐ FLUSH MOUNT
☑ ABOVE GROUND W/BUMPER POST
☑ CONCRETE ☐ ASPHALT



MONITORING WELL

MONITORING WELL NO. TG07-MW-08
PROJECT PESRM AST Closure
SITE 3144 W. Passyunk Ave.
BOREHOLE NO. N/A
WELL PERMIT NO. N/A
TOC TO BOTTOM OF WELL 12.0'

ANNULAR SEAL

AMOUNT CALCULATED
AMOUNT USED 0.25 (12.5 lbs)
☑ GROUT FORMULA
PORTLAND CEMENT
BENTONITE PDS Bentonite
WATER
☐ PREPARED MIX
PRODUCT
MFG. BY
METHOD INSTALLED
☐ POURED ☐ TREMIE

CASING

☑ SCHEDULE 40 PVC
☐
PRODUCT
MFG BY.
CASING DIAMETER:
ID 2" OD 2.375"
LENGTH OF CASING 2.75'

WELL SCREEN

☐ SCHEDULE 40 PVC
☑ Schedule 40 PVC pre-pack
PRODUCT
MFG. BY: Geoprobe
CASING DIAMETER:
ID 2.0" OD 2.75"
SLOT SIZE 0.010
LENGTH OF SCREEN 10.0'
LENGTH OF SUMP .25 "

BOREHOLE BACKFILL

AMOUNT CALCULATED
AMOUNT USED
☐ BENTONITE CHIPS, SIZE
☐ BENTONITE PELLETS, SIZE
☐ SLURRY
☐ FORMATION COLLAPSE
FROM TO
PRODUCT
MFG. BY
METHOD INSTALLED:
☐ POURED ☐ TREMIE

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW02	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	997.4
Site/Location:	3144 Passyunk Ave, Philadelphia, PA			Initial Water Level (ft):	4.45
Date:	4/11/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	Nick Daigle	Screen Interval:	2'-12'	Meter:	Horiba U-52
Weather:	55-70 F, cloudy	Sample Depth:	8'	Sample Time:	13:12

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*gal/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
11:58	0.25	4.45	16.82	6.76	2.13	-108	0.46	49.4
12:08	0.25	-	16.64	6.63	2.11	-112	0.20	91.9
12:18	0.25	-	16.41	6.49	2.09	-109	0.07	64.7
12:28	0.25	-	16.28	6.41	2.09	-108	0.01	49.3
12:38	0.25	-	15.87	6.40	2.10	-110	0.00	34.3
12:48	0.25	-	15.88	6.43	2.09	-112	0.00	41.2
12:58	0.25	-	15.86	6.44	2.09	-115	0.00	38.3
13:08	0.25	4.96	15.87	6.45	2.10	-116	0.00	32.8

Sample Parameters:
Benzene, Benzo(a)pyrene, and Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW03	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	62.7
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	5.22
Date:	4/11/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	Nick Daigle	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	55-70 F, cloudy	Sample Depth:	5'	Sample Time:	15:50

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*gal/min*	*Δ <0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
14:35	0.25	5.22	15.61	7.56	0.660	-77	0.60	281
14:45	0.25	-	15.2	6.94	0.770	-90	0.05	242
14:55	0.25	-	14.85	6.7	0.802	-94	0.04	280
15:05	0.25	-	14.87	6.59	0.903	-97	0.00	98.9
15:15	0.25	-	14.86	6.51	0.939	-98	0.00	36.3
15:25	0.25	-	14.98	6.47	0.961	-99	0.00	19.4
15:35	0.25	-	14.94	6.47	0.975	-102	0.00	13.8
15:45	0.25	5.47	14.95	6.47	0.981	-102	0.00	12.9

Sample Parameters:
Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW-05	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	63.6
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	5.11
Date:	4/11/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	Nick Daigle	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	55-70 F, cloudy	Sample Depth:	5'	Sample Time:	18:00

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*gal/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
16:21	0.25	5.11	16.68	7.32	1.460	-33	5.16	104
16:31	0.25	-	15.98	7.08	1.360	-113	0.84	190
16:41	0.25	-	17.16	6.95	0.724	-100	1.62	231
16:51	0.25	-	17.43	7.03	1.340	-87	2.51	72.5
17:01	0.25	-	18.31	6.96	1.440	-88	3.12	57.2
17:11	0.25	-	18.92	7.07	1.410	-82	4.43	40.8
17:21	0.25	-	19.01	7.13	1.420	-82	5.44	44.2
17:31	0.25	12.97	19.11	7.17	1.400	-84	6.49	33.0

Sample Parameters:
Naphthalene and Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW01	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	101.2
Site/Location:	3144 Passyunk Ave, Philadelphia, PA			Initial Water Level (ft):	5.71
Date:	5/14/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	60 F Cloudy/Rain	Sample Depth:	5'	Sample Time:	1610

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
15:30	490	6.15	18.96	7.16	0.415	-62	5.48	27.6
15:35	490	6.15	18.93	7.14	0.414	-65	5.35	20.0
15:40	490	6.57	18.48	6.82	0.418	-50	3.31	12.0
15:45	490	6.75	15.55	6.8	0.598	-78	0.35	12.2
15:50	490	6.8	15.75	6.80	0.579	-76	0.53	12.9
15:55	490	6.82	16.4	6.79	0.589	-74	0.61	13.0
16:00	490	6.86	16.73	6.82	0.596	-76	0.60	13.5

Sample Parameters:
Lead

Groundwater Purge Log

Client: PESRM		Well ID: TG06-MW02		Intergrity/Security: Intact	
Project/Task: 200.00135.012		Well Permit #:		PID Reading (ppm): 207.9	
Site/Location: 3144 Passyunk Ave, Philadelphia, PA		Casing Diameter: 2"		itial Water Level (ft): 4.97	
Date: 5/14/2024		Casing Material: pvc		Pump: Peristaltic	
Personnel: AL		Screen Interval: 2'-12'		Meter: Horiba U-52	
Weather: 60 F Cloudy/Rain		Sample Depth: 8'		Sample Time: 1345	

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ <0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
13:05	490	4.97	17.01	7	1.71	-105	2.06	21.3
13:10	490	5.64	16.58	7.01	1.75	-108	2.73	17.7
13:15	490	5.65	16.16	7.01	1.81	-104	2.70	26.9
13:20	490	5.59	15.87	7.02	1.86	-116	3.39	34.4
13:25	490	5.5	16.69	7.04	1.83	-122	2.86	65.8
13:30	490	5.51	16.66	7.08	1.92	-117	5.01	113
13:35	490	5.48	16.83	7.13	1.91	-120	5.22	105
13:40	490	5.45	17	7.11	1.90	-120	5.06	109

Sample Parameters:
Benzene, Benzo(a)pyrene, and Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW-03	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	172.0
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	6.13
Date:	5/14/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	60 F Cloudy/Rain	Sample Depth:	5'	Sample Time:	1300

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
12:20	490	6.15	17.88	8.13	0.67	-128	9.8	15.2
12:25	490	6.24	15.03	6.83	0.86	-113	0.2	4.3
12:30	490	6.25	14.75	6.66	0.97	-108	0.0	15.3
12:35	490	6.22	14.77	6.61	1.03	-106	0.0	16.3
12:40	490	6.22	14.85	6.58	1.06	-105	0.0	12.8
12:45	490	6.22	14.82	6.57	1.08	-105	0.0	7.0
12:50	490	6.25	14.78	6.54	1.10	-104	0.0	0.0
12:55	490	6.26	14.78	6.53	1.13	-104	0.0	0.0

Sample Parameters:
Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW-04	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	187.5
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	5.1
Date:	5/14/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	60 F Cloudy/Rain	Sample Depth:	5'	Sample Time:	1510

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
14:30	490	5.70	18.34	8.19	0.673	-128	3.34	37.5
14:35	490	5.69	18.63	7.90	0.642	-111	4.08	37.3
14:40	490	5.70	18.88	7.70	0.625	-102	4.78	29.8
14:45	490	5.70	19.09	7.52	0.609	-95	5.63	23.2
14:50	490	5.70	19.21	7.41	0.597	-91	5.79	19.5
14:55	490	5.70	19.27	7.34	0.585	-88	6.15	19.5
15:00	490	5.70	19.3	7.31	0.585	-86	6.21	20
15:05	490	5.70	19.333	7.28	0.582	-85	6.33	20.4

Sample Parameters:
Benzene and 1,3,5-Trimethylbenzene

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW-05	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	44.0
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	4.61
Date:	5/14/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	60 F Cloudy/Rain	Sample Depth:	5'	Sample Time:	1200

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	**±3%**	*±10 mV*	*±10%*	*±10%*
11:15	490	6.37	18.06	7.68	0.933	-84	2.84	147
11:20	490	6.34	18.48	7.54	0.921	-99	4.74	71.3
11:25	490	6.31	18.71	7.58	0.916	-112	5.03	68.4
11:30	490	6.62	18.77	7.54	0.903	-104	4.87	74.6
11:35	490	6.64	18.59	7.53	0.901	-111	5.01	77.1
11:40	490	6.61	18.86	7.56	0.918	-121	5.09	67.2
11:45	490	6.61	18.66	7.57	0.938	-124	5.91	157
11:50	490	6.60	18.82	7.59	0.948	-121	5.14	188.0
11:55	490	6.60	19.11	7.61	0.95	-120	5.24	190
12:00	490	6.60	19.37	7.62	0.943	-123	5.16	200

Sample Parameters:
Naphthalene and Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW01	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	
Site/Location:	3144 Passyunk Ave, Philadelphia, PA			Initial Water Level (ft):	4.57
Date:	6/13/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	80 F Sunny	Sample Depth:	5'	Sample Time:	10:55

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
10:30	250	5.1	22.25	6.47	1.75	-75	0.56	14.4
10:35	250	5.65	20.15	6.45	1.79	-90	0.00	2.6
10:40	250	6.15	19.86	6.45	1.79	-92	0.00	0.0
10:45	250	6.78	19.31	6.44	1.80	-94	0.00	0.0
10:50	250	7.06	19.26	6.43	1.80	-95	0.00	0.0

Sample Parameters:
Lead

Groundwater Purge Log

Client:	PESRM	Well ID:	TG06-MW-04	Intergrity/Security:	Intact
Project/Task:	200.00135.012	Well Permit #:		PID Reading (ppm):	
Site/Location:	3144 Passyunk Ave, Philadelphia, PA	Casing Diameter:	2"	itial Water Level (ft):	5.24
Date:	6/13/2024	Casing Material:	pvc	Pump:	Peristaltic
Personnel:	AL	Screen Interval:	1'-10'	Meter:	Horiba U-52
Weather:	80 F Sunny	Sample Depth:	5'	Sample Time:	12:25

Time	Purge Rate (mL/min)	DTW (ft)	Temp (ºC)	pH	Cond (ms/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)
3-5 min	*<500 mL/min*	*Δ<0.3 ft*	*±10%*	*±0.1*	*±3%*	*±10 mV*	*±10%*	*±10%*
11:45	400	5.24	21.04	6.76	0.704	-81	0.40	7.8
11:50	400	8.20	21.45	6.88	0.822	-99	3.68	16.5
11:55	400	8.20	21.55	6.86	0.853	-100	4.14	36.3
12:00	400	8.22	21.43	6.84	0.888	-98	4.32	34.2
12:05	400	8.23	21.32	6.82	0.960	-99	3.97	50.4
12:10	400	8.23	21.61	6.85	0.957	-101	4.38	99
12:15	400	8.24	22.18	6.89	1.103	-105	4.13	106
12:20	400	8.20	22.48	6.91	1.120	-107	4.10	105.8

Sample Parameters:
Benzene and 1,3,5-Trimethylbenzene

Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-01

Date:	01/05/2023	Casing Material:	PVC	Depth to Water (ft bmp):	4.16
Purge Method:	QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12.0
Volume Units:	mL	Pump Intake (ft bmp)	9.5	Water Column (ft)	7.84
Purge Start Time:	12:30	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/05/2023	COC:	
Sample Time:	14:20	Analysis:	
Sample ID:	TG07-MW-01	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
13:25	360	17360	4.16	9.94	8.48	446	84	2.44	9.1	
13:30	360	19160.0	4.16	9.43	9.06	452	70	1.43	16.1	
13:35	360	20960.0	4.16	9.24	9.15	450	61	1.22	12.7	
13:40	360	22760.0	4.16	9.20	9.23	450	52	1.13	7.8	
13:45	360	24560.0	4.16	9.21	9.31	449	43	1.11	5.5	
13:50	360	26360.0	4.16	9.18	9.44	449	39	1.09	3.9	
13:55	360	28160.0	4.16	9.18	9.36	447	38	1.07	3.2	
14:00	360	29960.0	4.16	9.19	9.43	447	30	1.01	2.3	
14:05	360	31760.0	4.16	9.33	9.40	445	26	1.01	2.4	
14:10	360	33560.0	4.16	9.28	9.36	446	28	1.00	1.6	
14:15	360	35360.0	4.16	9.23	9.43	445	30	0.98	1.3	
14:20	360	37160.0	4.16	9.19	9.41	446	28	1.00	1.1	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-02

Date:	01/04/2023	Casing Material:	PVC	Depth to Water (ft bmp):	6.81
Purge Method:	QED bladder pump	Casing Diameter (in):	2	Well Depth (ft bmp)	13.0
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	6.19
Purge Start Time:	11:40	Screen Interval (ft bmp):	2.75-12.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/04/2023	COC:	
Sample Time:	13:20	Analysis:	
Sample ID:	TG07-MW-02-220104 and MS and MSD	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
12:35	100	6100	7.01	14.38	6.57	1.42	78	2.06	90.8	
12:40	100	6600.0	7.09	12.82	6.56	1.48	25	1.24	99.0	
12:45	100	7100.0	7.28	12.03	6.60	1.49	1	0.90	104	
12:50	10	7150.0	7.35	11.96	6.59	1.50	-6	0.79	107	
12:55	100	7650.0	7.50	11.72	6.61	1.49	-10	0.78	109	
13:00	100	8150.0	7.64	11.73	6.61	1.50	-13	0.75	108	
13:05	100	8650.0	7.73	11.58	6.62	1.50	-18	0.75	112	
13:10	100	9150.0	7.84	11.68	6.58	1.50	-21	0.73	110	
13:15	100	9650.0	7.98	11.53	6.61	1.51	-24	0.72	104	
13:20	100	10150.0	8.03	11.51	6.61	1.50	-24	0.73	109	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition		X		

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-03

Date:	01/04/2023	Casing Material:	PVC	Depth to Water (ft bmp):	3.14
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	16.5
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	13.36
Purge Start Time:	12:00	Screen Interval (ft bmp):	16-6 ft from toc.	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/04/2023	COC:	
Sample Time:	14:05	Analysis:	vocs|svocs|metals -filtered
Sample ID:	TG07-MW-03-230104	Bottles:	5 voas. 2 250 ml amber. 1 250 ml plastic filtered
Duplicate Sample ID:		Odor:	None
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
12:00	110	0	3.14							Begin purge
12:10	110	1100.0	3.40							
12:20	110	2200.0	3.78							Flow rate at minimum but drawdown exceeds 0.3 ft. Continue pumping at minimum rate.
12:50	110	5500.0	4.07							Begin stabilizing parameters
12:55	110	6050.0	4.08	12.73	6.31	1180	-31	2.52	66.8	
13:00	110	6600.0	4.07	12.16	6.55	1170	-76	1.94	64.4	
13:05	110	7150.0	4.07	11.84	6.52	1170	-96	1.72	55.4	
13:10	110	7700.0	4.07	11.52	6.68	1160	-111	1.70	50.6	
13:15	110	8250.0	4.07	11.43	6.74	1150	-121	1.44	43.3	
13:20	110	8800.0	4.07	11.52	6.67	1150	-123	1.46	40.4	
13:25	110	9350.0	4.07	11.52	6.69	1150	-131	1.26	37	
13:30	110	9900.0	4.07	11.60	6.75	1150	-134	1.18	34.4	
13:35	110	10450.0	4.07	11.62	6.91	1150	-139	1.09	21.2	
13:40	110	11000.0	4.07	11.50	6.78	1150	-139	1.07	16.4	
13:45	110	11550.0	4.07	11.30	6.83	1150	-141	1.01	15.0	
13:50	110	12100.0	4.07	11.43	6.78	1150	-138	1.00	13.0	
13:55	110	12650.0	4.07	11.33	6.80	1140	-144	0.97	12.6	

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
14:00	110	13200.0	4.07	11.38	6.75	1140	-145	0.95	10.4	2 hours since beginning purge. Everything except turb is stable. Speak with Michael to get approval. Prepare to collect sample anyway.

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				stick up
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			
Remarks				Near puddled water

Photos

Location name: 'TG07-MW-03', Date: 01/04/23 12:25, Azimuth: 300.0661092419328,Latitude: 39.903431066276774, Longitude: -75.20641737705743

Location name: 'TG07-MW-03', Date: 01/04/23 12:51, Azimuth: 145.50764018059468,Latitude: 39.90344565551132, Longitude: -75.2064455138511

TG07-MW-04

Date:	01/05/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.39
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	
Purge Start Time:		Screen Interval (ft bmp):		Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:		COC:	
Sample Time:		Analysis:	
Sample ID:		Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection		X		
Is well ID visible?		X		
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-04-1

Date:	01/05/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.44
Purge Method:	QED Bladder pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12
Volume Units:	mL	Pump Intake (ft bmp)	11.12	Water Column (ft)	4.56
Purge Start Time:	08:55	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/05/2023	COC:	
Sample Time:	11:05	Analysis:	
Sample ID:	TG07-MW-04	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
10:00	155	15155	7.44	10.93	6.89	1160	14	0.84	0.0	
10:03	155	15620.0	7.44	10.85	6.88	1160	9	0.82	0.0	
10:10	155	16705.0	7.44	10.87	6.88	1160	2	0.78	0.0	
10:15	155	17480.0	7.44	10.84	6.93	1150	-5	0.77	0.0	
10:20	155	18255.0	7.44	10.96	6.93	1150	-7	0.75	0.0	
10:25	155	19030.0	7.44	11.00	6.92	1150	-15	0.72	0.0	
10:30	155	19805.0	7.44	11.07	6.93	1150	-19	0.75	0.0	
10:35	155	20580.0	7.44	10.75	6.91	1160	-27	0.77	0.0	
10:40	155	21355.0	7.44	10.71	6.88	1170	-31	0.76	0.0	
10:45	155	22130.0	7.44	10.72	6.88	1170	-35	0.75	0.0	
10:50	155	22905.0	7.44	10.85	6.88	1170	-38	0.75	0.0	
10:55	155	23680.0	7.44	10.89	6.88	1160	-43	0.71	0.0	
11:00	155	24455.0	7.44	10.89	6.90	1160	-42	0.72	0.0	
11:05	155	25230.0	7.44	10.95	6.9	1160	-45	0.72	0.0	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-05

Date:	01/05/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.05
Purge Method:	QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	4.95
Purge Start Time:	08:05	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/05/2023	COC:	
Sample Time:	09:50	Analysis:	
Sample ID:	TG07-MW-05-230105	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
09:05	355	15355	7.05	12.13	5.82	497	7	1.28	18.0	
09:10	355	17130.0	7.05	12.09	6.20	474	-55	0.70	15.1	
09:15	355	18905.0	7.05	12.11	6.22	473	-66	0.64	13.0	
09:20	355	20680.0	7.05	12.17	6.27	472	-76	0.59	12.4	
09:25	355	22455.0	7.05	12.24	6.20	472	-80	0.57	10.1	
09:30	355	24230.0	7.05	12.29	6.19	472	-81	0.66	10.2	
09:35	355	26005.0	7.05	12.31	6.29	471	-81	0.56	8.9	
09:40	355	27780.0	7.05	12.34	6.25	472	-89	0.54	7.7	
09:45	355	29555.0	7.05	12.40	6.31	473	-87	0.54	7.5	
09:50	355	31330.0	7.05	12.45	6.23	472	-90	0.52	7.0	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				utility vault
Well secured on initial inspection	X			
Is well ID visible?		X		
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

TG07-MW-07

Date:	01/06/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.02
Purge Method:	QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	4.98
Purge Start Time:	14:50	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/06/2023	COC:	
Sample Time:	15:50	Analysis:	
Sample ID:	TG07-MW-07-230106	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
15:35	100	700	7.25	10.91	5.80	525	-43	1.02	15.0	
15:40	100	1200.0	7.25	11.03	5.94	525	-49	0.88	13.9	
15:45	100	1700.0	7.25	11.09	5.92	524	-47	0.79	13.5	
15:50	109	2245.0	7.25	11.07	5.94	522	-47	0.73	13.6	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				utility vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			
Remarks				Bailed out little over a sheen product prior to inserting low-flow equipment

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-08-1

Date:	01/31/2023	Casing Material:	PVC	Depth to Water (ft bmp):	8.01
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12
Volume Units:	mL	Pump Intake (ft bmp)	11.5	Water Column (ft)	3.99
Purge Start Time:	13:00	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	01/05/2023	COC:	
Sample Time:	15:05	Analysis:	
Sample ID:	TG07-MW-08-230105	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
14:45	155	16155	9.03	13.89	6.42	1030	2	0.55	0.0	
14:50	155	16930.0	9.03	13.85	6.35	1030	-4	0.53	0.0	
14:55	155	17705.0	9.03	13.85	6.35	1030	-11	0.52	0.0	Excessive drawdown, water might have been above screen, excessive drawdown even with minimum flow rate, equilibrium reached at around 9.02 DTW, could increase flow rate slightly
15:00	155	18480.0	9.03	13.86	6.44	1030	-10	0.52	0.0	
15:05	155	19255.0	9.03	13.83	6.44	1030	-12	0.50	0.0	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-01

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	4.70
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	7.3
Purge Start Time:	11:11	Screen Interval (ft bmp):	1.75-11.75	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	12:10	Analysis:	
Sample ID:	TG07-MW-01-230208	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
11:50	120	5280	4.7	9.13	9.36	0.361	-2	0.99	10.2	
11:55	120	5880.0	4.76	8.61	9.34	0.353	-12	0	8.1	
12:00	120	1800.0	4.8	8.53	9.31	0.353	-12	0	6.1	
12:05	120	2400.0	4.73	8.11	9.27	0.354	-12	0	5.5	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				stick up
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

Location name: 'TG07-MW-01', Date: 02/08/2023 12:27, Azimuth: 228.4390548942335,Latitude: 39.9040679401507

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-02

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	3.57
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	13
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	8.43
Purge Start Time:	08:56	Screen Interval (ft bmp):	2.75-12.75 feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	10:05	Analysis:	
Sample ID:	TG07-MW-02-230208	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
09:35	100	12100	6.48	11.87	6.26	1230	-71	0.0	46.8	Minimum low flow rate, excessive draw down
09:40	100	12600.0	6.51	11.46	6.11	1100	-66	0.0	46.4	
09:45	100	13100.0	6.54	11.41	6.01	1080	-62	0.0	49.0	
09:50	100	13600.0	6.56	11.81	5.98	1070	-60	0.0	54.2	
09:55	100	14100.0	6.59	11.78	5.95	1060	-59	0.0	80.9	
10:00	100	14600.0	7.15	11.61	5.93	1060	-58	0.0	79.8	
10:05	100	15100.0	7.18	11.61	5.92	1070	-58	0.0	87.7	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Stick up
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-03

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	3.60
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12.5
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	8.4
Purge Start Time:	08:30	Screen Interval (ft bmp):	2.25-12.25 feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	09:55	Analysis:	
Sample ID:	TG-07-MW-03-230208	Bottles:	
Duplicate Sample ID:		Odor:	N/A
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
09:25	130	7800	4.21	8.23	6.74	0.92	-105	0	53.3	
09:30	130	8450.0	4.17	8.12	6.76	0.922	-107	0	28.2	
09:35	130	1950.0	4.20	8.05	6.79	0.923	-110	0.0	20.1	
09:40	130	2600.0	4.20	8.16	6.8	0.909	-112	0	17.9	
09:45	130	3250.0	4.21	8.01	6.81	0.921	-113	0	17.4	
09:50	130	3900.0	4.20	8.4	6.82	0.922	-114	0	16.1	
09:55	130	4550.0	4.21	8.38	6.83	0.926	-115	0	15.4	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

TG07-MW-04

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.6
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12.0 feet bgs
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	
Purge Start Time:	13:45	Screen Interval (ft bmp):	1.75-11.75 feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	14:40	Analysis:	
Sample ID:	TG07-MW-04-230208	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
14:15	120	4200	8	12.62	7.04	0.813	-86	0.01	21.4	
14:20	120	1200.0	8.15	12.21	7.03	0.827	-93	0	19.2	
14:25	120	1800.0	8.15	12.16	7.03	0.83	-95	0	17.7	
14:30	120	2400.0	8.10	12.16	7.03	0.832	-97	0	16.3	
14:35	120	3000.0	8.1	12.13	7.03	0.834	-98	0	17.1	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Stick up
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

TG07-MW-05

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.25
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	
Purge Start Time:	13:53	Screen Interval (ft bmp):		Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	14:40	Analysis:	
Sample ID:	TG07-MW-05-230208	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
14:15	120	12120	7.40	12.63	6.28	408	-68	0.0	39.0	
14:20	120	12720.0	7.42	12.45	6.23	402	-63	0.0	40.4	
14:25	120	13320.0	7.42	12.40	6.21	399	-62	0.0	35.6	
14:30	120	13920.0	7.42	12.40	6.25	396	-62	0.0	32.8	
14:35	120	14520.0	7.42	12.40	6.26	395	-62	0.0	32.3	
14:40	120	15120.0	7.42	12.34	6.25	397	-63	0.0	31.7	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-05

Date:	02/09/2023	Casing Material:	PVC	Depth to Water (ft bmp):	7.42
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12.0 feet bgs
Volume Units:	mL	Pump Intake (ft bmp)	11	Water Column (ft)	
Purge Start Time:	08:53	Screen Interval (ft bmp):	1.75-11.75 feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/09/2023	COC:	
Sample Time:	10:10	Analysis:	
Sample ID:	TG07-MW-05-230209 and QAQC's	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
09:50	130	23130	7.40	11.48	6.07	438	-11	0.58	17.4	
09:55	130	23780.0	7.40	10.26	6.11	414	-37	0.0	13.9	
10:00	130	24430.0	7.42	9.99	6.10	404	-42	0.0	14.2	
10:05	130	25080.0	7.42	9.79	6.10	401	-45	0.0	14.4	
10:10	130	25730.0	7.42	9.79	6.09	400	-46	0.0	14.9	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

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Groundwater Monitoring Field Data Form

Site: PESRM AST Closure

3144 West Passyunk Avenue, Philadelphia

Project No.: P044.001.002

TG07-MW-08

Date:	02/08/2023	Casing Material:	PVC	Depth to Water (ft bmp):	8.20
Purge Method:	Low Flow - QED Bladder Pump	Casing Diameter (in):	2	Well Depth (ft bmp)	12.0 feet bgs
Volume Units:	mL	Pump Intake (ft bmp)	11.5	Water Column (ft)	
Purge Start Time:	11:47	Screen Interval (ft bmp):	1.75-11.75 feet bgs	Water Quality Meter:	Horiba
Comments:					

Sampling Summary

Sample Date:	02/08/2023	COC:	
Sample Time:	12:35	Analysis:	
Sample ID:	TG07-MW-08-230208	Bottles:	
Duplicate Sample ID:		Odor:	
Duplicate Sample Time:		Remarks:	

Field Stabilization Parameters

Time	Flow Rate	Cuml Volume	DTW (ft bmp)	Temp (C)	pH	Conductivity (us/cm)	ORP (mV)	Disssolved Oxygen (mg/l)	Turbidity	Remarks
Historical Range:										
12:05	120	10120	9.11	12.71	6.66	714	-64	0.0	19.8	
12:10	120	10720.0	9.11	12.57	6.63	716	-65	0.0	18.8	
12:15	120	11320.0	9.15	12.57	6.61	717	-65	0.0	17.1	
12:20	120	11920.0	9.15	12.54	6.59	720	-66	0.0	14.4	
12:25	120	12520.0	9.15	12.64	6.59	720	-67	0.0	14.9	
12:30	120	13120.0	9.15	12.53	6.59	723	-67	0.0	14.7	
12:35	120	13720.0	9.15	12.50	6.58	728	-67	0.0	14.0	

Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of Well Head				Utility Vault
Well secured on initial inspection	X			
Is well ID visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Photos

Appendix F

Historical Soil and Groundwater Analytical Results and Gauging Information

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1231-01	1231-01	1231-02	1231-02	1231-03	1231-03	1231-04	1231-04	1232A-01	1232A-01	1232A-02	1232A-02	1232A-02	1232A-03
Area	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)			0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	2.0 - 3.5	0.0 - 2.0	4.0 - 5.0	4.0 - 5.0	0.0 - 2.0
Sample Date			8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	1/18/2023	1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023
Comments								Field Duplicate							Field Duplicate	
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00055)	ND (0.00046)	ND (0.00053)	ND (0.00061)	0.001 (0.00052)	0.0047 (0.00052)	ND (0.00052)	ND (0.00051)	ND (0.0007)	ND (0.00049)	0.0011 (0.00052)	0.00097 (0.00063)	0.0027 (0.00068)	ND (0.00069)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0022)	ND (0.0018)	ND (0.0021)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0021)	ND (0.002)	ND (0.0028)	ND (0.002)	ND (0.0021)	0.0025 (0.0025)	0.0041 (0.0027)	ND (0.0028)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.0011)	ND (0.00092)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0014)	ND (0.00098)	ND (0.001)	ND (0.0013)	ND (0.0014)	ND (0.0014)
1,2-Dichloroethane	85	0.5	ND (0.0011)	ND (0.00092)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0014)	ND (0.00098)	ND (0.001)	ND (0.0013)	ND (0.0014)	ND (0.0014)
Ethyl Benzene	880	70	ND (0.0011)	ND (0.00092)	ND (0.0011)	0.00076 J (0.0012)	ND (0.001)	ND (0.001)	ND (0.001)	0.00057 J (0.001)	ND (0.0014)	ND (0.00098)	ND (0.001)	0.00093 J (0.0013)	0.0019 (0.0014)	ND (0.0014)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0011)	ND (0.00092)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0014)	ND (0.00098)	ND (0.001)	ND (0.0013)	ND (0.0014)	ND (0.0014)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0011)	ND (0.00092)	0.0016 (0.0011)	0.0057 (0.0012)	ND (0.001)	0.0014 (0.001)	ND (0.001)	0.0021 (0.001)	ND (0.0014)	ND (0.00098)	0.0009 J (0.001)	0.0038 (0.0013)	0.0101 (0.0014)	0.00081 J (0.0014)
1,2,4-Trimethylbenzene	4700	300	ND (0.0022)	ND (0.0018)	ND (0.0021)	0.00091 J (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0021)	0.00068 J (0.002)	ND (0.0028)	ND (0.002)	ND (0.0021)	0.0044 (0.0025)	0.0059 (0.0027)	ND (0.0028)
1,3,5-Trimethylbenzene	4700	93	ND (0.0022)	ND (0.0018)	ND (0.0021)	ND (0.0024)	ND (0.0021)	ND (0.0021)	ND (0.0021)	0.00061 J (0.002)	ND (0.0028)	ND (0.002)	ND (0.0021)	0.0018 J (0.0025)	0.0023 J (0.0027)	ND (0.0028)
Xylenes (total)	7900	1000	ND (0.0011)	ND (0.00092)	ND (0.0011)	0.0031 (0.0012)	ND (0.001)	ND (0.001)	ND (0.001)	0.0025 (0.001)	ND (0.0014)	ND (0.00098)	ND (0.001)	0.0119 (0.0013)	0.0194 (0.0014)	ND (0.0014)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.036)	ND (0.035)	33.3 (3.9)	8.19 (0.19)	0.037 J (0.04)	ND (0.039)	0.0339 J (0.036)	0.11 (0.038)	ND (0.035)	ND (0.035)	0.119 (0.079)	0.397 (0.073)	0.321 (0.084)	0.738 (0.22)
Benzo(a)anthracene	130	340	0.0159 J (0.036)	0.012 J (0.035)	77.7 (3.9)	21.6 (0.93)	0.0351 J (0.04)	0.0317 J (0.039)	0.219 (0.036)	0.348 (0.038)	0.0434 (0.035)	ND (0.035)	0.52 (0.079)	0.774 (0.073)	0.738 (0.084)	1.59 (0.22)
Benzo(a)pyrene	91	46	ND (0.036)	ND (0.035)	74.4 (3.9)	20.9 (0.93)	0.101 (0.04)	0.0531 (0.039)	0.234 (0.036)	0.266 (0.038)	0.0465 J (0.035)	ND (0.035)	0.53 (0.079)	0.576 (0.073)	0.642 (0.084)	1.82 (0.22)
Benzo(b)fluoranthene	76	170	0.0178 J (0.036)	ND (0.035)	91.7 (3.9)	25.2 (0.93)	0.136 (0.04)	0.109 (0.039)	0.328 (0.036)	0.346 (0.038)	0.0498 (0.035)	ND (0.035)	0.579 (0.079)	0.51 (0.073)	0.607 (0.084)	1.64 (0.22)
Benzo(g,h,i)perylene	190000	180	ND (0.036)	ND (0.035)	40.9 (3.9)	8.98 (0.19)	0.208 (0.04)	0.0932 (0.039)	0.167 (0.036)	0.146 (0.038)	0.0542 J (0.035)	ND (0.035)	0.419 (0.079)	0.436 (0.073)	0.474 (0.084)	1.2 (0.22)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.0134 J (0.036)	ND (0.035)	71.8 (3.9)	20 (0.93)	0.0424 (0.04)	0.0463 (0.039)	0.235 (0.036)	0.344 (0.038)	0.053 (0.035)	ND (0.035)	1.08 (0.079)	1.36 (0.073)	1.33 (0.084)	1.95 (0.22)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.036)	ND (0.035)	13.3 (0.19)	3.96 (0.19)	ND (0.04)	ND (0.039)	ND (0.036)	0.0199 J (0.038)	ND (0.035)	ND (0.035)	0.0824 (0.079)	0.635 (0.073)	0.344 (0.084)	0.444 (0.22)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0055)	ND (0.0046)	0.197 (0.0053)	0.162 (0.0061)	ND (0.0052)	ND (0.0052)	ND (0.0052)	0.0043 J (0.0051)	ND (0.007)	ND (0.0049)	ND (0.0052)	0.013 (0.0063)	0.0149 (0.0068)	ND (0.0069)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	ND (0.036)	ND (0.035)	124 (3.9)	30.3 (0.93)	0.039 J (0.04)	0.0302 J (0.039)	0.122 (0.036)	0.374 (0.038)	0.0707 (0.035)	0.021 J (0.035)	0.3 (0.079)	2.5 (0.073)	1.61 (0.084)	1.61 (0.22)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.0156 J (0.036)	0.0158 J (0.035)	137 (3.9)	37.3 (0.93)	0.0421 (0.04)	0.0485 (0.039)	0.341 (0.036)	0.986 (0.038)	0.0665 (0.035)	0.0173 J (0.035)	1.41 (0.079)	1.7 (0.073)	1.72 (0.084)	2.44 (0.22)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1231-01	1231-01	1231-02	1231-02	1231-03	1231-03	1231-04	1231-04	1232A-01	1232A-01	1232A-02	1232A-02	1232A-02	1232A-03
Area			Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	2.0 - 3.5	0.0 - 2.0	4.0 - 5.0	4.0 - 5.0	0.0 - 2.0
Sample Date			8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	8/30/2022	1/18/2023	1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023
Comments								Field Duplicate							Field Duplicate	
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	29.2 (11)	3.3 (2.3)	702 (12)	390 (12)	198 (12)	233 (12)	224 (11)	46 (22)	589 (10)	340 (2.1)	363 (2.5)	137 (2.3)	291 (2.5)	1240 (14)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1232A-03	1232A-04	1232A-04	1232B-01	1232B-01	1232B-02	1232B-02	1232B-02	1232B-03	1232B-04	1232B-04	1332-01	1332-02	1332-03
Area	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			2.0 - 3.0	0.0 - 2.0	3.0 - 4.5	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 1.5	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Sample Date			1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023	1/18/2023	1/19/2023	1/18/2023	1/19/2023	1/19/2023	5/11/2022	5/11/2022	5/10/2022
Comments									Field Duplicate							
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00081)	ND (0.00065)	ND (0.079)	0.0024 (0.00055)	0.0098 (0.00059)	ND (0.00052)	ND (0.00068)	ND (0.00061)	ND (0.055)	0.0055 (0.00072)	0.0049 (0.00074)	ND (0.00053)	ND (0.00045)	ND (0.00058)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0032)	ND (0.0026)	ND (0.32)	0.0056 (0.0022)	0.0047 (0.0024)	ND (0.0021)	ND (0.0027)	ND (0.0025)	ND (0.22)	0.0055 (0.0029)	0.0067 (0.003)	ND (0.0021)	ND (0.0018)	ND (0.0023)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.0016)	ND (0.0013)	ND (0.16)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0014)	ND (0.0012)	ND (0.11)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
1,2-Dichloroethane	85	0.5	ND (0.0016)	ND (0.0013)	ND (0.16)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0014)	ND (0.0012)	ND (0.11)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
Ethyl Benzene	880	70	ND (0.0016)	0.0006 J (0.0013)	0.0929 J (0.16)	ND (0.0011)	0.0052 (0.0012)	0.0013 (0.001)	ND (0.0014)	0.0018 (0.0012)	0.173 (0.11)	0.0211 (0.0014)	0.0556 (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0016)	ND (0.0013)	ND (0.16)	ND (0.0011)	ND (0.0012)	ND (0.001)	ND (0.0014)	ND (0.0012)	ND (0.11)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0016)	0.0012 J (0.0013)	ND (0.16)	0.0013 (0.0011)	0.0064 (0.0012)	0.00096 J (0.001)	ND (0.0014)	ND (0.0012)	ND (0.11)	0.0601 (0.0014)	0.0948 (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	300	ND (0.0032)	0.0121 (0.0026)	0.112 J (0.32)	0.0017 J (0.0022)	0.0012 J (0.0024)	0.0013 J (0.0021)	ND (0.0027)	0.0013 J (0.0025)	0.22 (0.22)	0.0122 (0.0029)	4.69 (0.3)	ND (0.0021)	ND (0.0018)	ND (0.0023)
1,3,5-Trimethylbenzene	4700	93	ND (0.0032)	0.0135 (0.0026)	0.192 J (0.32)	0.0016 J (0.0022)	0.0032 (0.0024)	0.00062 J (0.0021)	ND (0.0027)	0.00059 J (0.0025)	1.12 (0.22)	0.0541 (0.0029)	0.135 (0.003)	ND (0.0021)	ND (0.0018)	ND (0.0023)
Xylenes (total)	7900	1000	ND (0.0016)	0.0253 (0.0013)	0.0776 J (0.16)	0.0081 (0.0011)	0.0147 (0.0012)	0.0069 (0.001)	0.0021 (0.0014)	0.0072 (0.0012)	0.46 (0.11)	0.158 (0.0014)	0.669 (0.0015)	ND (0.0011)	ND (0.00089)	ND (0.0012)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	1.11 (0.052)	5.24 (0.093)	2.86 (0.043)	0.0523 (0.036)	0.152 (0.037)	0.192 (0.17)	0.0988 (0.041)	0.504 (0.081)	ND (0.039)	0.314 (0.075)	0.756 (0.05)	ND (0.036)	ND (0.038)	0.269 (0.2)
Benzo(a)anthracene	130	340	1.98 (0.052)	8.63 (0.093)	0.454 (0.043)	0.127 (0.036)	0.383 (0.037)	0.343 (0.17)	0.185 (0.041)	0.692 (0.081)	ND (0.039)	0.428 (0.075)	0.816 (0.05)	0.0237 J (0.036)	0.0684 (0.038)	0.794 (0.2)
Benzo(a)pyrene	91	46	2.88 J (0.052)	6.5 (0.093)	0.336 (0.043)	0.136 (0.036)	0.439 (0.037)	0.518 (0.17)	0.318 (0.041)	0.622 (0.081)	ND (0.039)	0.474 (0.075)	0.671 (0.05)	0.0189 J (0.036)	0.068 (0.038)	0.79 (0.2)
Benzo(b)fluoranthene	76	170	2.81 (0.052)	7.16 (0.093)	0.306 (0.043)	0.155 (0.036)	0.502 (0.037)	0.475 (0.17)	0.3 (0.041)	0.769 (0.081)	ND (0.039)	0.515 (0.075)	0.704 (0.05)	0.0253 J (0.036)	0.109 (0.038)	1.04 (0.2)
Benzo(g,h,i)perylene	190000	180	1.73 J (0.052)	3.71 (0.093)	0.269 (0.043)	0.124 (0.036)	0.357 (0.037)	0.387 (0.17)	0.237 (0.041)	0.521 (0.081)	ND (0.039)	0.443 (0.075)	0.535 (0.05)	ND (0.036)	0.0685 (0.038)	0.541 (0.2)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	2.28 (0.052)	8.77 (0.093)	0.732 (0.043)	0.156 (0.036)	0.519 (0.037)	0.524 (0.17)	0.331 (0.041)	0.805 (0.081)	ND (0.039)	0.53 (0.075)	0.955 (0.05)	0.0217 J (0.036)	0.0803 (0.038)	0.904 (0.2)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.468 (0.052)	2.62 (0.093)	7.51 (0.21)	0.0849 (0.036)	0.115 (0.037)	0.0982 J (0.17)	0.031 J (0.041)	0.333 (0.081)	ND (0.039)	0.25 (0.075)	0.664 (0.05)	ND (0.036)	ND (0.038)	0.158 J (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0081)	0.0336 (0.0065)	0.899 (0.79)	ND (0.0055)	ND (0.0059)	ND (0.0052)	ND (0.0068)	ND (0.0061)	2.42 (0.55)	0.0041 J (0.0072)	0.0401 (0.0074)	ND (0.0053)	ND (0.0045)	ND (0.0058)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	2.16 (0.052)	15.3 (0.47)	16.5 (0.21)	0.137 (0.036)	0.466 (0.037)	0.541 (0.17)	0.218 (0.041)	1.28 (0.081)	ND (0.039)	0.747 (0.075)	1.75 (0.05)	0.0318 J (0.036)	0.0589 (0.038)	1.11 (0.2)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	2.64 (0.052)	17.3 (0.47)	1.52 (0.043)	0.264 (0.036)	0.8 (0.037)	0.661 (0.17)	0.388 (0.041)	1.09 (0.081)	ND (0.039)	0.841 (0.075)	1.79 (0.05)	0.0449 (0.036)	0.0946 (0.038)	1.56 (0.2)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1232A-03	1232A-04	1232A-04	1232B-01	1232B-01	1232B-02	1232B-02	1232B-02	1232B-03	1232B-04	1232B-04	1332-01	1332-02	1332-03
Area			Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	2.0 - 3.0	0.0 - 2.0	3.0 - 4.5	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 1.5	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0
Sample Date			1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023	1/18/2023	1/19/2023	1/18/2023	1/19/2023	1/19/2023	5/11/2022	5/11/2022	5/10/2022
Comments									Field Duplicate							
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	262 (3.1)	446 (2.7)	80.7 (2.6)	252 (1.5)	290 (2.2)	256 (2.1)	1020 (12)	261 (2.6)	896 (2.5)	262 (2.3)	299 (3.1)	12.3 (2.3)	253 (2.4)	853 (12)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1332-03	1332-04	137-01	137-01	137-01	137-02	137-02	137-03	137-04	1732_1733-01	1732_1733-02	1732_1733-02	1732_1733-03	1732_1733-03
Area	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07
Collection Depth (ft bgs)			0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	3.0 - 4.0
Sample Date			5/10/2022	5/10/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	5/11/2022	5/11/2022	5/11/2022	5/11/2022	5/11/2022
Comments			Field Duplicate				Field Duplicate									
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00051)	ND (0.00084)	ND (0.00046)	ND (0.00068)	0.00069 (0.00044)	0.0019 (0.00069)	ND (0.00076)	ND (0.00057)	ND (0.00044)	0.0025 (0.00059)	ND (0.00071)	0.0075 (0.00051)	0.0019 (0.00063)	0.534 E,J (0.00044)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.002)	ND (0.0034)	ND (0.0018)	0.118 (0.0027)	ND (0.0018)	0.0153 (0.0028)	0.0104 (0.0031)	ND (0.0023)	ND (0.0018)	0.0659 (0.0024)	ND (0.0028)	24.8 (2.3)	0.0299 (0.0025)	118 (6.2)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.001)	ND (0.0017)	ND (0.00092)	ND (0.0014)	ND (0.00088)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00088)	ND (0.0012)	ND (0.0014)	ND (0.001)	ND (0.0013)	ND (0.00089)
1,2-Dichloroethane	85	0.5	ND (0.001)	ND (0.0017)	ND (0.00092)	ND (0.0014)	ND (0.00088)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00088)	ND (0.0012)	ND (0.0014)	ND (0.001)	ND (0.0013)	ND (0.00089)
Ethyl Benzene	880	70	ND (0.001)	0.00094 J (0.0017)	ND (0.00092)	ND (0.0014)	ND (0.00088)	0.0016 (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00088)	ND (0.0012)	ND (0.0014)	0.0154 (0.001)	ND (0.0013)	0.0411 (0.00089)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.001)	ND (0.0017)	ND (0.00092)	0.001 J (0.0014)	ND (0.00088)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00088)	ND (0.0012)	ND (0.0014)	ND (0.001)	ND (0.0013)	ND (0.00089)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.001)	0.0014 J (0.0017)	ND (0.00092)	ND (0.0014)	ND (0.00088)	ND (0.0014)	ND (0.0015)	ND (0.0011)	ND (0.00088)	ND (0.0012)	ND (0.0014)	0.0028 (0.001)	ND (0.0013)	0.144 (0.00089)
1,2,4-Trimethylbenzene	4700	300	ND (0.002)	0.0039 (0.0034)	ND (0.0018)	0.0033 (0.0027)	ND (0.0018)	0.014 (0.0028)	0.0061 (0.0031)	ND (0.0023)	ND (0.0018)	ND (0.0024)	ND (0.0028)	0.0095 (0.0021)	ND (0.0025)	0.0099 (0.0018)
1,3,5-Trimethylbenzene	4700	93	0.00045 J (0.002)	0.0096 (0.0034)	ND (0.0018)	ND (0.0027)	ND (0.0018)	0.0059 (0.0028)	0.01 (0.0031)	0.0012 J (0.0023)	ND (0.0018)	ND (0.0024)	ND (0.0028)	0.0097 (0.0021)	ND (0.0025)	0.0041 (0.0018)
Xylenes (total)	7900	1000	0.00056 J (0.001)	0.0075 (0.0017)	ND (0.00092)	0.0119 (0.0014)	ND (0.00088)	0.0118 (0.0014)	0.0034 (0.0015)	ND (0.0011)	ND (0.00088)	0.0011 J (0.0012)	ND (0.0014)	0.011 (0.001)	ND (0.0013)	0.1 (0.00089)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.171 J (0.18)	4.55 (0.22)	0.587 (0.19)	0.176 (0.038)	0.218 (0.037)	0.41 (0.18)	0.52 (0.19)	0.374 (0.18)	ND (0.035)	0.044 (0.038)	ND (0.04)	0.0637 (0.037)	3.44 (0.19)	0.144 (0.037)
Benzo(a)anthracene	130	340	0.562 (0.18)	9.01 (0.22)	1.3 (0.19)	0.511 (0.038)	0.681 (0.037)	0.381 (0.18)	0.752 (0.19)	0.649 (0.18)	ND (0.035)	0.147 (0.038)	0.0549 (0.04)	0.184 (0.037)	12.6 (0.19)	0.161 (0.037)
Benzo(a)pyrene	91	46	0.631 (0.18)	7.71 (0.22)	1.62 (0.19)	0.644 (0.038)	0.896 (0.037)	0.417 (0.18)	0.639 (0.38)	0.7 (0.18)	ND (0.035)	0.187 (0.038)	0.0519 (0.04)	0.175 (0.037)	14 (0.19)	0.128 (0.037)
Benzo(b)fluoranthene	76	170	0.769 (0.18)	9.32 (0.22)	1.54 (0.19)	0.746 (0.038)	0.867 (0.037)	0.427 (0.18)	0.666 (0.38)	0.651 (0.18)	ND (0.035)	0.22 (0.038)	0.0591 (0.04)	0.207 (0.037)	13.6 (0.19)	0.15 (0.037)
Benzo(g,h,i)perylene	190000	180	0.492 (0.18)	5.43 (0.22)	0.486 (0.19)	0.175 (0.038)	0.233 (0.037)	0.163 J (0.18)	0.597 (0.38)	0.195 (0.18)	ND (0.035)	0.176 (0.038)	0.0327 J (0.04)	0.122 (0.037)	5.34 (0.19)	0.0778 (0.037)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.604 (0.18)	9.7 (0.22)	1.42 (0.19)	0.619 (0.038)	0.779 (0.037)	0.717 (0.18)	1.34 (0.19)	0.773 (0.18)	ND (0.035)	0.191 (0.038)	0.0583 (0.04)	0.21 (0.037)	11.8 (0.19)	0.177 (0.037)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.112 J (0.18)	2.23 (0.22)	0.196 (0.19)	0.0503 (0.038)	0.0561 (0.037)	ND (0.18)	0.465 (0.19)	0.233 (0.18)	ND (0.035)	0.0478 (0.038)	ND (0.04)	0.0451 (0.037)	2.04 (0.19)	0.203 (0.037)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0051)	0.0136 (0.0084)	ND (0.0046)	0.0036 J (0.0068)	ND (0.0044)	0.0082 (0.0069)	ND (0.0076)	ND (0.0057)	ND (0.0044)	ND (0.0059)	ND (0.0071)	ND (0.0051)	ND (0.0063)	0.0206 (0.0044)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.565 (0.18)	15.3 (0.22)	1.88 (0.19)	0.47 (0.038)	0.651 (0.037)	1.84 (0.18)	2.25 (0.19)	1.5 (0.18)	ND (0.035)	0.168 (0.038)	0.028 J (0.04)	0.146 (0.037)	8.05 (0.19)	0.574 (0.037)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.965 (0.18)	16.6 (0.22)	3.15 (0.19)	1.21 (0.038)	1.63 (0.037)	1.27 (0.18)	2.23 (0.19)	1.6 (0.18)	ND (0.035)	0.259 (0.038)	0.0886 (0.04)	0.327 (0.037)	15.2 (0.19)	0.308 (0.037)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			1332-03	1332-04	137-01	137-01	137-01	137-02	137-02	137-03	137-04	1732_1733-01	1732_1733-02	1732_1733-02	1732_1733-03	1732_1733-03
Area			Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	3.0 - 4.0	0.0 - 2.0	3.0 - 4.0
Sample Date			5/10/2022	5/10/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	8/11/2022	5/11/2022	5/11/2022	5/11/2022	5/11/2022	5/11/2022
Comments			Field Duplicate				Field Duplicate									
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	234 (4.8)	329 (14)	113 (2.3)	426 (2.3)	136 (2.3)	839 (11)	416 (11)	339 (2.3)	189 (2.1)	92.4 (2.2)	28.4 (2.5)	27.2 (2.1)	212 (2.4)	25.6 (2.3)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	1732_1733-04 Tank Group 07 0.0 - 2.0 5/11/2022	1732_1733-04 Tank Group 07 3.0 - 4.0 5/11/2022	231_232-01 Unassigned 0.0 - 2.0 5/10/2022	231_232-01 Unassigned 4.0 - 5.0 5/10/2022	231_232-02 Unassigned 0.0 - 2.0 5/10/2022	231_232-02 Unassigned 4.0 - 5.0 5/10/2022	231_232-03 Unassigned 0.0 - 2.0 5/10/2022	231_232-03 Unassigned 2.0 - 2.5 5/20/2022	231_232-03 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 0.0 - 2.0 5/10/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022 Field Duplicate
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.0887 (0.00064)	0.109 (0.00062)	ND (0.00052)	ND (0.00053)	ND (0.00051)	ND (0.00059)	0.0067 (0.00066)	NA	0.0021 J,H (0.0029)	0.244 (0.076)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	108 (2.6)	556 (7.4)	ND (0.0021)	ND (0.0021)	ND (0.002)	0.0032 (0.0024)	ND (0.0026)	NA	ND,H (0.0029)	35.9 (3)	NA	2.35 H (0.0574)	3.03 H (0.0629)	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0013)	NA	ND,H (0.0029)	ND (0.15)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
1,2-Dichloroethane	85	0.5	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0013)	NA	ND,H (0.0029)	ND (0.15)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
Ethyl Benzene	880	70	ND (0.0013)	0.0012 (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0013)	NA	ND,H (0.0029)	0.329 (0.15)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0013)	ND (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	ND (0.0013)	NA	ND,H (0.0029)	ND (0.15)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0013)	0.0017 (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	0.0026 (0.0013)	NA	ND,H (0.0029)	0.208 (0.15)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
1,2,4-Trimethylbenzene	4700	300	0.0093 (0.0026)	0.0246 (0.0025)	ND (0.0021)	ND (0.0021)	ND (0.002)	ND (0.0024)	ND (0.0026)	NA	ND,H (0.0029)	0.144 J (0.3)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
1,3,5-Trimethylbenzene	4700	93	0.0048 (0.0026)	0.0158 (0.0025)	ND (0.0021)	ND (0.0021)	ND (0.002)	ND (0.0024)	ND (0.0026)	NA	ND,H (0.0029)	ND (0.3)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
Xylenes (total)	7900	1000	0.0138 (0.0013)	0.0265 (0.0012)	ND (0.001)	ND (0.0011)	ND (0.001)	ND (0.0012)	0.0031 (0.0013)	NA	ND,H (0.0086)	0.599 (0.15)	NA	ND,H (0.0065)	ND,H (0.0065)	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.039)	0.134 (0.04)	0.283 (0.19)	0.143 (0.037)	0.234 (0.19)	1.34 (0.038)	0.189 J (0.19)	0.121 (0.039)	NA	4.21 (0.19)	0.669 (0.041)	NA	NA	0.609 (0.041)
Benzo(a)anthracene	130	340	0.054 (0.039)	0.211 (0.04)	0.741 (0.19)	0.521 (0.037)	1.36 (0.19)	2.45 (0.038)	0.455 (0.19)	0.228 (0.039)	NA	7.67 (0.19)	0.618 (0.041)	NA	NA	0.572 (0.041)
Benzo(a)pyrene	91	46	0.0462 (0.039)	0.151 (0.04)	0.894 (0.19)	0.586 (0.037)	1.48 (0.19)	1.93 (0.038)	0.478 (0.19)	0.328 (0.039)	NA	6.43 (0.19)	0.591 (0.041)	NA	NA	0.569 (0.041)
Benzo(b)fluoranthene	76	170	0.0613 (0.039)	0.181 (0.04)	1.02 (0.19)	0.66 (0.037)	1.8 (0.19)	2.19 (0.038)	0.71 (0.19)	0.454 (0.039)	NA	7.86 (0.19)	0.725 (0.041)	NA	NA	0.661 J (0.041)
Benzo(g,h,i)perylene	190000	180	0.0352 J (0.039)	0.0728 (0.04)	0.459 (0.19)	0.342 (0.037)	0.859 (0.19)	0.866 (0.038)	0.392 (0.19)	0.326 (0.039)	NA	4.02 (0.19)	0.409 (0.041)	NA	NA	0.254 (0.041)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.0553 (0.039)	0.192 (0.04)	0.864 (0.19)	0.568 (0.037)	1.46 (0.19)	2.64 (0.038)	0.524 (0.19)	0.333 (0.039)	NA	8.15 (0.19)	0.677 (0.041)	NA	NA	0.499 (0.041)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.039)	0.13 (0.04)	0.247 (0.19)	0.0906 (0.037)	ND (0.19)	1.46 (0.038)	ND (0.19)	0.0345 J (0.039)	NA	1.75 (0.19)	0.824 (0.041)	NA	NA	0.87 (0.041)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0064)	ND (0.0062)	ND (0.0052)	ND (0.0053)	ND (0.0051)	ND (0.0059)	ND (0.0066)	NA	ND,H (0.0029)	ND (0.76)	NA	ND,H (0.0022)	ND,H (0.0022)	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.0229 J (0.039)	0.417 (0.04)	0.664 (0.19)	0.203 (0.037)	0.504 (0.19)	5.88 (0.19)	0.741 (0.19)	0.229 (0.039)	NA	13.9 (0.19)	2.13 (0.041)	NA	NA	1.53 (0.041)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.0981 (0.039)	0.413 (0.04)	1.08 (0.19)	0.598 (0.037)	1.36 (0.19)	6.06 (0.19)	0.678 (0.19)	0.282 (0.039)	NA	12.8 (0.19)	1.21 (0.041)	NA	NA	1.09 (0.041)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	1732_1733-04 Tank Group 07 0.0 - 2.0 5/11/2022	1732_1733-04 Tank Group 07 3.0 - 4.0 5/11/2022	231_232-01 Unassigned 0.0 - 2.0 5/10/2022	231_232-01 Unassigned 4.0 - 5.0 5/10/2022	231_232-02 Unassigned 0.0 - 2.0 5/10/2022	231_232-02 Unassigned 4.0 - 5.0 5/10/2022	231_232-03 Unassigned 0.0 - 2.0 5/10/2022	231_232-03 Unassigned 2.0 - 2.5 5/20/2022	231_232-03 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 0.0 - 2.0 5/10/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022	231_232-04 Unassigned 2.0 - 2.5 5/20/2022 Field Duplicate
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	23.2 (2.4)	15.1 (2.5)	137 (2.5)	64.3 (4.4)	151 (2.2)	152 (2.4)	1330 (5)	201 (4.9)	NA	343 (2.3)	164 (2.4)	NA	NA	3.3 (2.4)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	433-01	433-01	433-02	433-02	433-03	433-04	433-04	433-04	532-01	532-02	532-02	532-03	532-03	532-04
Area			Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)			0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	4.0 - 5.0	0.0 - 2.0	0.0 - 2.0	2.0 - 3.0	0.0 - 0.0	0.0 - 2.0	0.0 - 2.0	4.0 - 5.5	0.0 - 2.0	2.5 - 3.5	0.0 - 2.0
Sample Date			12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023
Comments										Field Duplicate						
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	0.0053 (0.00057)	ND (0.00043)	ND (0.00075)	ND (0.00052)	ND (0.00065)	0.0037 (0.00059)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0023)	ND (0.0017)	0.0208 (0.003)	ND (0.0021)	ND (0.0026)	ND (0.0024)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0011)	ND (0.00086)	ND (0.0015)	ND (0.001)	ND (0.0013)	ND (0.0012)
1,2-Dichloroethane	85	0.5	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0011)	ND (0.00086)	ND (0.0015)	ND (0.001)	ND (0.0013)	ND (0.0012)
Ethyl Benzene	880	70	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0011)	ND (0.00086)	0.00098 J (0.0015)	ND (0.001)	ND (0.0013)	0.00067 J (0.0012)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0011)	ND (0.00086)	ND (0.0015)	ND (0.001)	ND (0.0013)	ND (0.0012)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	0.00088 J (0.0011)	ND (0.00086)	ND (0.0015)	ND (0.001)	ND (0.0013)	0.0027 (0.0012)
1,2,4-Trimethylbenzene	4700	300	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0023)	ND (0.0017)	0.0028 J (0.003)	ND (0.0021)	ND (0.0026)	ND (0.0024)
1,3,5-Trimethylbenzene	4700	93	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0023)	ND (0.0017)	0.00073 J (0.003)	ND (0.0021)	ND (0.0026)	ND (0.0024)
Xylenes (total)	7900	1000	ND (0.012)	ND,IQ (0.51)	ND,IQ (0.47)	ND,IQ (0.41)	ND (0.011)	ND,IQ (0.4)	ND,IQ (0.45)	ND,IQ (0.49)	ND (0.0011)	ND (0.00086)	0.003 (0.0015)	ND (0.001)	ND (0.0013)	0.0019 (0.0012)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.67 (0.094)	0.58 (0.098)	ND (0.017)	ND (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	ND (0.018)	0.13 (0.072)	ND (0.035)	7.77 (0.1)	0.181 (0.073)	0.437 (0.043)	0.337 (0.042)
Benzo(a)anthracene	130	340	0.84 (0.094)	0.54 (0.098)	ND (0.017)	ND (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	ND (0.018)	0.35 (0.072)	ND (0.035)	7.18 (0.1)	0.644 (0.073)	0.601 (0.043)	1.02 (0.042)
Benzo(a)pyrene	91	46	1.1 (0.094)	0.59 (0.098)	ND (0.017)	0.02 (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	ND (0.018)	0.387 (0.072)	ND (0.035)	4.95 (0.1)	0.475 (0.073)	0.601 (0.043)	1.34 (0.042)
Benzo(b)fluoranthene	76	170	1.1 (0.094)	0.63 (0.098)	ND (0.017)	0.03 (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	ND (0.018)	0.426 (0.072)	ND (0.035)	5.21 (0.1)	0.548 (0.073)	0.695 (0.043)	1.53 (0.042)
Benzo(g,h,i)perylene	190000	180	0.84 (0.094)	0.38 (0.098)	ND (0.017)	0.025 (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	ND (0.018)	0.279 (0.072)	ND (0.035)	2.5 (0.1)	0.437 (0.073)	0.485 (0.043)	0.833 (0.042)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.93 (0.094)	0.6 (0.098)	ND (0.017)	0.027 (0.018)	ND (0.019)	0.023 (0.018)	0.02 (0.018)	0.023 (0.018)	0.399 (0.072)	ND (0.035)	7.72 (0.1)	0.639 (0.073)	0.698 (0.043)	1.15 (0.042)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.32 (0.094)	0.78 (0.098)	ND (0.017)	ND (0.018)	ND (0.019)	0.41 (0.018)	0.36 (0.018)	0.44 (0.018)	0.0482 J (0.072)	ND (0.035)	6.35 (0.1)	0.105 (0.073)	0.327 (0.043)	0.125 (0.042)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0059)	ND,IQ (0.25)	ND,IQ (0.24)	ND,IQ (0.2)	ND (0.0055)	ND,IQ (0.2)	ND,IQ (0.22)	ND,IQ (0.25)	ND (0.0057)	ND (0.0043)	0.005 J (0.0075)	ND (0.0052)	ND (0.0065)	ND (0.0059)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	1.8 (0.094)	0.95 (0.098)	ND (0.017)	0.024 (0.018)	ND (0.019)	ND (0.018)	ND (0.018)	0.23 (0.018)	0.33 (0.072)	ND (0.035)	12.8 (0.5)	0.455 (0.073)	1.15 (0.043)	1.05 (0.042)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	1.2 (0.094)	1.2 (0.098)	ND (0.017)	0.073 (0.018)	ND (0.019)	0.14 (0.018)	0.12 (0.018)	0.14 (0.018)	0.558 (0.072)	ND (0.035)	19 (0.5)	0.764 (0.073)	1.25 (0.043)	1.62 (0.042)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			433-01	433-01	433-02	433-02	433-03	433-04	433-04	433-04	532-01	532-02	532-02	532-03	532-03	532-04
Area			Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 2.0	2.0 - 3.0	0.0 - 2.0	4.0 - 5.0	0.0 - 2.0	0.0 - 2.0	2.0 - 3.0	0.0 - 0.0	0.0 - 2.0	0.0 - 2.0	4.0 - 5.5	0.0 - 2.0	2.5 - 3.5	0.0 - 2.0
Sample Date			12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	1/18/2023	1/19/2023	1/19/2023	1/19/2023	1/19/2023	1/18/2023
Comments										Field Duplicate						
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	210 (1.5)	110 F2 (1.6)	14 (1.4)	370 (1.2)	1.3 (1.2)	4.9 (1.4)	ND (1.4)	1.3 (1.2)	1820 (11)	9.3 (2.2)	394 (3)	332 (2.2)	146 (2.5)	527 (12)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			532-04	AOI6 BH-12-101	AOI6 BH-12-102	AOI6 BH-12-104	AOI6 BH-12-105	AOI6 BH-12-106	AOI6 BH-12-106	AOI6 BH-12-107	AOI6 BH-12-107	AOI6 BH-12-108	AOI6 BH-12-108	AOI6 BH-12-109	AOI6 BH-12-110	AOI6 BH-12-111
Area			Tank Group 06	Unassigned	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	4.0 - 5.0	2.0 - 3.0	2.0 - 2.5	0.5 - 1.0	2.0 - 2.5	1.0 - 1.5	2.0 - 2.5	1.0 - 1.5	2.5 - 3.0	0.5 - 1.0	2.0 - 2.5	2.5 - 3.0	3.0 - 3.5	0.5 - 1.0
Sample Date			1/19/2023	12/4/2012	12/4/2012	12/4/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012	12/3/2012
Comments																
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.149 (0.069)	0.121 (0.063)	ND (0.13)	ND (0.063)	5.21 (0.36)	88.2 (0.64)	0.0011 (0.00094)	0.0124 (0.00092)	0.00066 J (0.0011)	23.6 (0.25)	11.2 (0.23)	0.476 (0.061)	4.09 (0.35)	0.207 J (0.25)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.28)	0.382 (0.32)	1.18 (0.66)	0.0351 J (0.32)	5.76 (1.8)	31.2 (3.2)	0.00068 J (0.0047)	0.00026 J (0.0046)	ND (0.0053)	25.2 (1.3)	58.7 (12)	1.55 (0.31)	23.1 (1.8)	0.295 J (1.2)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.14)	ND (0.063)	ND (0.13)	ND (0.063)	ND (0.36)	ND (0.064)	ND (0.00094)	ND (0.00092)	ND (0.0011)	ND (0.25)	ND (0.23)	ND (0.061)	ND (0.35)	ND (0.25)
1,2-Dichloroethane	85	0.5	ND (0.14)	ND (0.063)	ND (0.13)	ND (0.063)	ND (0.36)	ND (0.064)	ND (0.00094)	ND (0.00092)	ND (0.0011)	ND (0.25)	ND (0.23)	ND (0.061)	ND (0.35)	ND (0.25)
Ethyl Benzene	880	70	0.14 (0.14)	0.0679 (0.063)	ND (0.13)	ND (0.063)	0.976 (0.36)	0.452 (0.064)	ND (0.00094)	0.00039 J (0.00092)	ND (0.0011)	57.1 (5)	109 (2.3)	0.153 (0.061)	0.712 (0.35)	0.0992 J (0.25)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.14)	ND (0.063)	ND (0.13)	ND (0.063)	ND (0.36)	ND (0.064)	ND (0.00094)	ND (0.00092)	ND (0.0011)	ND (0.25)	ND (0.23)	ND (0.061)	ND (0.35)	ND (0.25)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.612 (0.14)	0.094 (0.063)	0.0547 J (0.13)	0.0154 J (0.063)	0.33 J (0.36)	5.34 (0.064)	ND (0.00094)	0.0017 (0.00092)	ND (0.0011)	10.3 (0.25)	5.26 (0.23)	0.0993 (0.061)	0.889 (0.35)	0.172 J (0.25)
1,2,4-Trimethylbenzene	4700	300	0.176 J (0.28)	0.0245 J (0.32)	ND (0.66)	ND (0.32)	3.11 (1.8)	0.717 (0.32)	ND (0.0047)	ND (0.0046)	ND (0.0053)	306 (25)	455 (47)	0.121 J (0.31)	4.23 (1.8)	0.301 J (1.2)
1,3,5-Trimethylbenzene	4700	93	ND (0.28)	ND (0.32)	ND (0.66)	ND (0.32)	1.01 J (1.8)	0.272 J (0.32)	ND (0.0047)	ND (0.0046)	ND (0.0053)	119 (25)	191 (12)	0.0553 J (0.31)	1.13 J (1.8)	0.624 J (1.2)
Xylenes (total)	7900	1000	0.326 (0.14)	0.276 (0.063)	0.0965 J (0.13)	ND (0.063)	4.24 (0.36)	1.14 (0.064)	ND (0.00094)	0.00094 (0.00092)	ND (0.0011)	314 (5)	675 (2.3)	0.17 (0.061)	2.72 (0.35)	0.638 (0.25)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	1.53 (0.079)	0.0217 J (0.037)	1.02 (0.049)	ND (0.038)	0.746 (0.035)	1.24 (0.17)	2.34 (0.035)	0.715 (0.069)	1.97 (0.035)	1.7 (0.032)	2.23 (0.032)	3.49 (0.071)	8.81 (1.5)	0.472 (0.17)
Benzo(a)anthracene	130	340	3.45 (0.079)	0.0907 (0.037)	0.276 (0.049)	0.0863 (0.038)	1.85 (0.035)	3.68 (0.17)	10.9 (0.71)	2.32 (0.069)	4.21 (0.35)	4.55 (0.65)	6.04 (0.32)	10.9 (0.71)	22.3 (1.5)	1.1 (0.17)
Benzo(a)pyrene	91	46	3.14 (0.079)	0.112 (0.037)	0.246 (0.049)	0.063 (0.038)	1.55 (0.035)	4.06 (0.17)	11.6 (0.71)	2.61 (0.069)	3.59 (0.35)	4.83 (0.65)	5.93 (0.32)	10.5 (0.71)	20.6 (1.5)	1.43 (0.17)
Benzo(b)fluoranthene	76	170	3.8 (0.079)	0.122 (0.037)	0.376 (0.049)	0.103 (0.038)	1.48 (0.035)	4.41 (0.17)	14 (0.71)	2.32 (0.069)	3.49 (0.35)	2.89 (0.032)	8.41 (0.32)	13.9 (0.71)	24.3 (1.5)	0.924 (0.17)
Benzo(g,h,i)perylene	190000	180	2.21 (0.079)	0.0816 (0.037)	0.304 (0.049)	0.0866 (0.038)	1.15 (0.035)	2.17 (0.17)	7.06 (0.71)	1.81 (0.069)	2.53 (0.035)	3.54 (0.65)	4.07 (0.32)	6.29 (0.071)	11.9 (1.5)	1.44 (0.17)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	3.58 (0.079)	0.0917 (0.037)	0.4 (0.049)	0.0989 (0.038)	1.82 (0.035)	3.49 (0.17)	11.1 (0.71)	2.37 (0.069)	3.92 (0.35)	5.36 (0.65)	7.37 (0.32)	13.7 (0.71)	22 (1.5)	2.93 (0.17)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.856 (0.079)	0.0199 J (0.037)	5.64 (0.25)	ND (0.038)	2.3 (0.035)	1.02 (0.17)	0.818 (0.035)	0.439 (0.069)	0.848 (0.035)	15.2 (0.65)	15.8 (0.32)	6.98 (0.071)	11.4 (1.5)	1.23 (0.17)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.904 (0.69)	0.0387 J (0.32)	ND (0.66)	ND (0.32)	0.966 J (1.8)	0.994 (0.32)	0.002 J (0.0047)	ND (0.0046)	ND (0.0053)	25.9 (1.3)	65.2 (12)	0.512 (0.31)	2.49 (1.8)	0.282 J (1.2)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	3.97 (0.079)	0.0748 (0.037)	10.4 (0.25)	0.0288 J (0.038)	3.34 (0.035)	5.8 (0.17)	10.7 (0.71)	3.02 (0.069)	7.48 (0.35)	14.9 (0.65)	18.5 (0.32)	24.9 (0.71)	44.4 (1.5)	1.74 (0.17)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	6.31 (0.079)	0.121 (0.037)	1.05 (0.049)	0.0825 (0.038)	2.89 (0.035)	6.8 (0.17)	18.7 (0.71)	5.05 (0.069)	7.59 (0.35)	7.95 (0.65)	11.3 (0.32)	19.7 (0.71)	41.9 (1.5)	3.64 (0.17)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	532-04 Tank Group 06 4.0 - 5.0 1/19/2023	AOI6 BH-12-101 Unassigned 2.0 - 3.0 12/4/2012	AOI6 BH-12-102 Tank Group 07 2.0 - 2.5 12/4/2012	AOI6 BH-12-104 Tank Group 07 0.5 - 1.0 12/4/2012	AOI6 BH-12-105 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-106 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-106 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-107 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-107 Unassigned 2.5 - 3.0 12/3/2012	AOI6 BH-12-108 Unassigned 0.5 - 1.0 12/3/2012	AOI6 BH-12-108 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-109 Unassigned 2.5 - 3.0 12/3/2012	AOI6 BH-12-110 Unassigned 3.0 - 3.5 12/3/2012	AOI6 BH-12-111 Unassigned 0.5 - 1.0 12/3/2012
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																	
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	395 (2.3)	56.3 (2.2)	283 (3.2)	161 (2.4)	341 (2.4)	897 (2.3)	960 (4.5)	221 (2.2)	546 (2.3)	380 (2.4)	383 (2.3)	954 (2.3)	2930 (5)	163 (2.2)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-111 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-112 Unassigned 0.5 - 1.0 12/3/2012	AOI6 BH-12-114 Tank Group 07 1.0 - 1.5 12/3/2012	AOI6 BH-12-114 Tank Group 07 3.0 - 3.5 12/3/2012	AOI6 BH-12-115 Unassigned 1.0 - 2.0 12/3/2012	AOI6 BH-12-116 Unassigned 3.0 - 3.5 12/3/2012	AOI6 BH-12-117 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-118 Unassigned 2.0 - 2.5 12/4/2012	AOI6 BH-12-119 Unassigned 0.5 - 1.0 12/4/2012	AOI6 BH-12-120 Unassigned 0.0 - 1.0 12/4/2012	AOI6 BH-12-121 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-122 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-122 Unassigned 2.5 - 3.0 12/3/2012	AOI6 BH-12-123 Unassigned 1.0 - 1.5 12/4/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.404 (0.23)	0.0016 (0.00095)	ND (0.00094)	0.245 (0.059)	0.0013 (0.00094)	0.068 (0.056)	0.157 (0.069)	0.00051 J (0.00099)	0.00056 J (0.001)	ND (0.0013)	0.01 (0.00084)	0.0034 (0.00088)	1.83 (0.056)	ND (0.001)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	0.2 J (1.2)	ND (0.0048)	ND (0.0047)	0.387 (0.29)	ND (0.0047)	0.524 (0.28)	0.797 (0.35)	0.00031 J (0.005)	0.00026 J (0.0051)	ND (0.0063)	0.0017 J (0.0042)	0.0082 (0.0044)	0.72 (0.28)	0.00034 J (0.0052)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.23)	ND (0.00095)	ND (0.00094)	ND (0.059)	ND (0.00094)	ND (0.056)	ND (0.069)	ND (0.00099)	ND (0.001)	ND (0.0013)	ND (0.00084)	ND (0.00088)	ND (0.056)	ND (0.001)
1,2-Dichloroethane	85	0.5	ND (0.23)	ND (0.00095)	ND (0.00094)	ND (0.059)	ND (0.00094)	ND (0.056)	ND (0.069)	ND (0.00099)	ND (0.001)	ND (0.0013)	ND (0.00084)	ND (0.00088)	ND (0.056)	ND (0.001)
Ethyl Benzene	880	70	0.116 J (0.23)	0.00044 J (0.00095)	ND (0.00094)	0.107 (0.059)	ND (0.00094)	0.0714 (0.056)	0.0258 J (0.069)	ND (0.00099)	ND (0.001)	ND (0.0013)	0.00029 J (0.00084)	0.0021 (0.00088)	0.191 (0.056)	ND (0.001)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.23)	ND (0.00095)	ND (0.00094)	ND (0.059)	ND (0.00094)	ND (0.056)	ND (0.069)	ND (0.00099)	ND (0.001)	ND (0.0013)	ND (0.00084)	ND (0.00088)	ND (0.056)	ND (0.001)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.217 J (0.23)	0.0022 (0.00095)	ND (0.00094)	0.224 (0.059)	0.00045 J (0.00094)	0.1 (0.056)	0.0813 (0.069)	0.00026 J (0.00099)	ND (0.001)	ND (0.0013)	0.002 (0.00084)	0.0033 (0.00088)	0.261 (0.056)	ND (0.001)
1,2,4-Trimethylbenzene	4700	300	0.277 J (1.2)	ND (0.0048)	0.00055 J (0.0047)	0.131 J (0.29)	ND (0.0047)	0.135 J (0.28)	0.0555 J (0.35)	ND (0.005)	ND (0.0051)	ND (0.0063)	0.0022 J (0.0042)	0.0079 (0.0044)	0.291 (0.28)	ND (0.0052)
1,3,5-Trimethylbenzene	4700	93	0.0943 J (1.2)	ND (0.0048)	ND (0.0047)	0.0385 J (0.29)	ND (0.0047)	0.0469 J (0.28)	ND (0.35)	ND (0.005)	ND (0.0051)	ND (0.0063)	0.0018 J (0.0042)	0.0049 (0.0044)	0.105 J (0.28)	ND (0.0052)
Xylenes (total)	7900	1000	0.652 (0.23)	0.00062 J (0.00095)	0.00044 J (0.00094)	0.612 (0.059)	0.00052 J (0.00094)	0.245 (0.056)	0.0616 J (0.069)	ND (0.00099)	0.00037 J (0.001)	ND (0.0013)	0.00097 (0.00084)	0.008 (0.00088)	0.407 (0.056)	ND (0.001)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.092 J (0.16)	0.151 (0.034)	0.0343 J (0.035)	0.31 (0.038)	0.224 (0.036)	0.142 (0.035)	0.262 (0.039)	0.151 (0.035)	0.219 (0.074)	0.185 (0.043)	3.43 (0.32)	0.21 (0.032)	0.625 (0.032)	0.597 (0.039)
Benzo(a)anthracene	130	340	0.171 (0.16)	0.411 (0.034)	0.0569 (0.035)	0.699 (0.038)	0.499 (0.036)	0.233 (0.035)	0.436 (0.039)	0.608 (0.035)	0.266 (0.074)	0.127 (0.043)	9.6 (0.32)	0.589 (0.032)	1.05 (0.032)	1.79 (0.039)
Benzo(a)pyrene	91	46	0.142 J (0.16)	0.484 (0.034)	0.0748 (0.035)	0.653 (0.038)	0.783 (0.036)	0.269 (0.035)	0.534 (0.039)	0.602 (0.035)	0.32 (0.074)	0.118 (0.043)	9.39 (0.32)	0.816 (0.032)	1.06 (0.032)	2.11 (0.039)
Benzo(b)fluoranthene	76	170	0.119 J (0.16)	0.626 (0.034)	0.0956 (0.035)	0.615 (0.038)	0.333 (0.036)	0.328 (0.035)	0.446 (0.039)	0.616 (0.035)	0.395 (0.074)	0.198 (0.043)	9.66 (0.32)	0.874 (0.032)	1.21 (0.032)	2.15 (0.039)
Benzo(g,h,i)perylene	190000	180	0.127 J (0.16)	0.335 (0.034)	0.1 (0.035)	0.537 (0.038)	0.766 (0.036)	0.302 (0.035)	0.488 (0.039)	0.343 (0.035)	0.587 (0.074)	0.555 (0.043)	5.39 (0.32)	0.915 (0.032)	0.764 (0.032)	1.59 (0.039)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.258 (0.16)	0.557 (0.034)	0.0876 (0.035)	0.872 (0.038)	1.03 (0.036)	0.29 (0.035)	0.664 (0.039)	0.599 (0.035)	0.295 (0.074)	0.236 (0.043)	10.5 (0.32)	0.73 (0.032)	1.28 (0.032)	1.87 (0.039)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.641 (0.16)	0.206 (0.034)	0.0227 J (0.035)	0.177 (0.038)	0.0803 (0.036)	0.12 (0.035)	0.0701 (0.039)	0.0297 J (0.035)	0.054 J (0.074)	0.022 J (0.043)	2.89 (0.032)	0.0605 (0.032)	1.3 (0.032)	0.307 (0.039)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.285 J (1.2)	ND (0.0048)	ND (0.0047)	0.197 J (0.29)	ND (0.0047)	0.161 J (0.28)	0.0757 J (0.35)	ND (0.005)	ND (0.0051)	ND (0.0063)	0.0018 J (0.0042)	0.0051 (0.0044)	0.5 (0.28)	ND (0.0052)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.68 (0.16)	0.51 (0.034)	0.055 (0.035)	0.751 (0.038)	0.2 (0.036)	0.318 (0.035)	0.374 (0.039)	0.248 (0.035)	0.17 (0.074)	0.243 (0.043)	22.9 (0.32)	0.456 (0.032)	2.03 (0.032)	1.49 (0.039)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.588 (0.16)	0.718 (0.034)	0.103 (0.035)	1.24 (0.038)	1.57 (0.036)	0.446 (0.035)	0.984 (0.039)	0.728 (0.035)	0.301 (0.074)	0.3 (0.043)	23.1 (0.32)	0.937 (0.032)	1.95 (0.032)	2.51 (0.039)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-111 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-112 Unassigned 0.5 - 1.0 12/3/2012	AOI6 BH-12-114 Tank Group 07 1.0 - 1.5 12/3/2012	AOI6 BH-12-114 Tank Group 07 3.0 - 3.5 12/3/2012	AOI6 BH-12-115 Unassigned 1.0 - 2.0 12/3/2012	AOI6 BH-12-116 Unassigned 3.0 - 3.5 12/3/2012	AOI6 BH-12-117 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-118 Unassigned 2.0 - 2.5 12/4/2012	AOI6 BH-12-119 Unassigned 0.5 - 1.0 12/4/2012	AOI6 BH-12-120 Unassigned 0.0 - 1.0 12/4/2012	AOI6 BH-12-121 Unassigned 2.0 - 2.5 12/3/2012	AOI6 BH-12-122 Unassigned 1.0 - 1.5 12/3/2012	AOI6 BH-12-122 Unassigned 2.5 - 3.0 12/3/2012	AOI6 BH-12-123 Unassigned 1.0 - 1.5 12/4/2012
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	34.6 (2)	427 (4.6)	49.1 (4.3)	34.7 (2.4)	126 (4.9)	1070 (2.3)	350 (2.4)	93.1 (2.3)	237 (2.5)	309 (2.7)	199 (2.1)	75.2 (2)	173 (2.3)	224 (2.4)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-123 Unassigned 2.0 - 2.5 12/4/2012	AOI6 BH-12-124 Tank Group 07 3.0 - 3.5 12/4/2012	AOI6 BH-12-125 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-126 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-127 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-128 Tank Group 07 3.0 - 3.5 12/4/2012	AOI6 BH-12-129 Tank Group 07 1.5 - 2.0 12/4/2012	AOI6 BH-12-129 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-130 Tank Group 07 1.0 - 2.0 12/4/2012	AOI6 BH-12-131 Unassigned 1.0 - 2.0 12/4/2012	AOI6 BH-12-135 Unassigned 1.0 - 1.5 12/5/2012	AOI6 BH-12-135 Unassigned 2.0 - 2.5 12/5/2012	AOI6 BH-12-136 Unassigned 1.0 - 1.5 12/5/2012	AOI6 BH-12-137 Unassigned 0.0 - 1.0 12/5/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	2.07 (0.049)	1380 (24)	ND (2.5)	87.2 (26)	149 (2.5)	535 (13)	91.6 (4.8)	1850 (54)	0.337 J (0.5)	0.11 (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	16.9 (1.2)	2110 (120)	64.2 (12)	678 (130)	374 (13)	919 (63)	311 (24)	6600 (270)	32.9 (2.5)	0.245 J (0.28)	ND (0.0045)	ND (0.0065)	ND (0.0042)	ND (0.0046)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.049)	ND (0.47)	ND (2.5)	ND (0.26)	ND (0.05)	ND (0.05)	ND (0.048)	ND (0.27)	ND (0.5)	ND (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
1,2-Dichloroethane	85	0.5	ND (0.049)	ND (0.47)	ND (2.5)	ND (0.26)	ND (0.05)	ND (0.05)	ND (0.048)	ND (0.27)	ND (0.5)	ND (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
Ethyl Benzene	880	70	0.464 (0.049)	5.87 (0.47)	ND (2.5)	14.6 (0.26)	18.7 (2.5)	57.8 (1.3)	0.837 (0.048)	12.6 (0.27)	ND (0.5)	0.136 (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.049)	ND (0.47)	ND (2.5)	ND (0.26)	ND (0.05)	ND (0.05)	ND (0.048)	ND (0.27)	ND (0.5)	ND (0.057)	ND (0.00091)	0.00071 J (0.0013)	ND (0.00084)	ND (0.00091)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.722 (0.049)	1640 (24)	ND (2.5)	197 (26)	339 (2.5)	1050 (13)	116 (4.8)	2070 (54)	0.175 J (0.5)	0.211 (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
1,2,4-Trimethylbenzene	4700	300	0.593 (0.25)	3.46 (2.4)	ND (12)	4.62 (1.3)	3.04 (0.25)	6.32 (0.25)	0.705 (0.24)	9.43 (1.4)	ND (2.5)	0.0814 J (0.28)	ND (0.0045)	ND (0.0065)	ND (0.0042)	ND (0.0046)
1,3,5-Trimethylbenzene	4700	93	0.24 J (0.25)	1.21 J (2.4)	ND (12)	2.08 (1.3)	1.41 (0.25)	2.92 (0.25)	0.257 (0.24)	3.38 (1.4)	ND (2.5)	0.0211 J (0.28)	ND (0.0045)	ND (0.0065)	ND (0.0042)	ND (0.0046)
Xylenes (total)	7900	1000	0.924 (0.049)	22.6 (0.47)	0.738 J (2.5)	68.5 (0.26)	83.6 (2.5)	248 (1.3)	3.69 (0.048)	51.6 (0.27)	ND (0.5)	0.216 (0.057)	ND (0.00091)	ND (0.0013)	ND (0.00084)	ND (0.00091)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	2.32 (0.035)	ND (0.033)	ND (0.035)	ND (0.073)	ND (0.032)	ND (0.035)	ND (0.033)	ND (0.07)	3.58 (0.73)	0.0602 (0.036)	ND (0.037)	0.485 (0.042)	0.0941 (0.035)	0.142 (0.036)
Benzo(a)anthracene	130	340	8.99 (0.35)	0.021 J (0.033)	0.0226 J (0.035)	0.0707 J (0.073)	0.0184 J (0.032)	ND (0.035)	0.0699 (0.033)	0.177 (0.07)	3.52 (0.036)	0.0983 (0.036)	0.0614 (0.037)	0.992 (0.042)	0.267 (0.035)	0.374 (0.036)
Benzo(a)pyrene	91	46	7.91 (0.35)	0.0179 J (0.033)	ND (0.035)	0.0491 J (0.073)	0.0138 J (0.032)	ND (0.035)	0.0627 (0.033)	0.121 (0.07)	6.52 (0.73)	0.116 (0.036)	0.0757 (0.037)	1.33 (0.042)	0.234 (0.035)	0.296 (0.036)
Benzo(b)fluoranthene	76	170	9.36 (0.35)	ND (0.033)	ND (0.035)	0.0556 J (0.073)	ND (0.032)	ND (0.035)	0.0687 (0.033)	0.126 (0.07)	11.3 (0.73)	0.0976 (0.036)	0.0894 (0.037)	1.2 (0.042)	0.265 (0.035)	0.307 (0.036)
Benzo(g,h,i)perylene	190000	180	3.58 (0.35)	ND (0.033)	ND (0.035)	0.0291 J (0.073)	ND (0.032)	ND (0.035)	0.0498 (0.033)	0.0832 (0.07)	4.33 (0.73)	0.178 (0.036)	0.0597 (0.037)	1.27 (0.042)	0.122 (0.035)	0.141 (0.036)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	8.28 (0.35)	0.0197 J (0.033)	0.0298 J (0.035)	0.0845 (0.073)	0.0164 J (0.032)	ND (0.035)	0.0711 (0.033)	0.243 (0.07)	9.88 (0.73)	0.136 (0.036)	0.0655 (0.037)	1.07 (0.042)	0.237 (0.035)	0.332 (0.036)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	3.39 (0.035)	ND (0.033)	ND (0.035)	0.034 J (0.073)	ND (0.032)	ND (0.035)	ND (0.033)	0.182 (0.07)	34.6 (0.73)	0.122 (0.036)	ND (0.037)	0.202 (0.042)	0.0334 J (0.035)	0.0342 J (0.036)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	1.11 (0.25)	0.479 J (2.4)	ND (12)	0.304 J (1.3)	0.103 J (0.25)	0.154 J (0.25)	0.0543 J (0.24)	0.898 J (1.4)	ND (2.5)	0.36 (0.28)	ND (0.037)	0.524 (0.042)	ND (0.035)	ND (0.036)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	6.1 (0.35)	0.0626 (0.033)	0.0208 J (0.035)	0.115 (0.073)	0.0161 J (0.032)	ND (0.035)	0.0395 (0.033)	0.437 (0.07)	10 (0.73)	0.174 (0.036)	0.0353 J (0.037)	1.16 (0.042)	0.373 (0.035)	0.556 (0.036)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	11.3 (0.35)	0.0317 J (0.033)	0.0363 (0.035)	0.123 (0.073)	0.0207 J (0.032)	ND (0.035)	0.121 (0.033)	0.406 (0.07)	12.1 (0.73)	0.14 (0.036)	0.0708 (0.037)	1.33 (0.042)	0.415 (0.035)	0.594 (0.036)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-123 Unassigned 2.0 - 2.5 12/4/2012	AOI6 BH-12-124 Tank Group 07 3.0 - 3.5 12/4/2012	AOI6 BH-12-125 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-126 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-127 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-128 Tank Group 07 3.0 - 3.5 12/4/2012	AOI6 BH-12-129 Tank Group 07 1.5 - 2.0 12/4/2012	AOI6 BH-12-129 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6 BH-12-130 Tank Group 07 1.0 - 2.0 12/4/2012	AOI6 BH-12-131 Unassigned 1.0 - 2.0 12/4/2012	AOI6 BH-12-135 Unassigned 1.0 - 1.5 12/5/2012	AOI6 BH-12-135 Unassigned 2.0 - 2.5 12/5/2012	AOI6 BH-12-136 Unassigned 1.0 - 1.5 12/5/2012	AOI6 BH-12-137 Unassigned 0.0 - 1.0 12/5/2012
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	133 (2.2)	5.5 (2.3)	11.4 (2.2)	8.7 (2.3)	13.8 (2.3)	6.5 (2.4)	48 (2.1)	107 (2.2)	84.4 (2.2)	111 (2.4)	106 (2.1)	311 (2.6)	853 (4.5)	137 (4.9)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-138	AOI6 BH-12-138	AOI6 BH-12-139	AOI6 BH-12-140	AOI6 BH-12-144	AOI6 BH-12-146	AOI6 BH-12-147	AOI6 BH-12-148	AOI6 BH-12-149	AOI6 BH-12-149	AOI6_B001	AOI6_B002	AOI6_B003	AOI6_B004
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07A	Tank Group 07A	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Tank Group 07	Unassigned
Collection Depth (ft bgs)			0.0 - 1.0	2.0 - 2.5	1.0 - 1.5	0.0 - 0.5	0.0 - 0.5	0.0 - 1.0	1.0 - 1.5	0.0 - 1.0	1.0 - 1.5	2.5 - 3.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Sample Date			12/5/2012	12/5/2012	12/5/2012	12/5/2012	12/5/2012	12/5/2012	12/5/2012	12/5/2012	12/4/2012	12/4/2012	6/27/2022	6/24/2022	6/24/2022	6/27/2022
Comments																
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	0.0506 J (0.07)	517 (2.8)	NA	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0074)	ND (0.0072)	ND (0.0048)	ND (0.0059)	ND (0.0041)	ND (0.0049)	ND (0.0044)	ND (0.0053)	0.147 J (0.35)	74.7 (7)	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	ND (0.07)	ND (1.4)	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	ND (0.07)	ND (1.4)	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	ND (0.07)	ND (1.4)	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	ND (0.07)	ND (1.4)	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	0.0223 J (0.07)	21.2 (1.4)	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	ND (0.0074)	ND (0.0072)	ND (0.0048)	ND (0.0059)	ND (0.0041)	ND (0.0049)	ND (0.0044)	ND (0.0053)	ND (0.35)	ND (7)	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.0074)	ND (0.0072)	ND (0.0048)	ND (0.0059)	ND (0.0041)	ND (0.0049)	ND (0.0044)	ND (0.0053)	ND (0.35)	ND (7)	NA	NA	NA	NA
Xylenes (total)	7900	1000	ND (0.0015)	ND (0.0014)	ND (0.00097)	ND (0.0012)	ND (0.00083)	ND (0.00098)	ND (0.00089)	ND (0.0011)	ND (0.07)	ND (1.4)	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.118 (0.041)	0.18 (0.09)	0.0718 (0.036)	0.29 (0.036)	ND (0.033)	0.0787 (0.038)	0.0166 J (0.034)	0.155 (0.041)	ND (0.037)	ND (0.036)	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.145 (0.041)	0.424 (0.09)	0.214 (0.036)	0.0701 (0.036)	0.0373 (0.033)	0.603 (0.038)	0.0519 (0.034)	0.328 (0.041)	0.0518 (0.037)	0.403 (0.036)	NA	NA	NA	NA
Benzo(a)pyrene	91	46	0.168 (0.041)	0.414 (0.09)	0.221 (0.036)	0.0915 (0.036)	0.0397 (0.033)	1.02 (0.038)	0.065 (0.034)	0.327 (0.041)	0.0576 (0.037)	0.452 (0.036)	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	0.215 (0.041)	0.416 (0.09)	0.24 (0.036)	0.103 (0.036)	0.056 (0.033)	1.36 (0.038)	0.0787 (0.034)	0.334 (0.041)	0.067 (0.037)	0.708 (0.036)	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.169 (0.041)	0.378 (0.09)	0.144 (0.036)	0.0844 (0.036)	0.0289 J (0.033)	0.982 (0.038)	0.0542 (0.034)	0.205 (0.041)	0.0459 (0.037)	0.458 (0.036)	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.148 (0.041)	0.468 (0.09)	0.219 (0.036)	0.0825 (0.036)	0.0422 (0.033)	0.818 (0.038)	0.0608 (0.034)	0.307 (0.041)	0.064 (0.037)	0.493 (0.036)	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.041)	0.0565 J (0.09)	ND (0.036)	ND (0.036)	ND (0.033)	0.0195 J (0.038)	ND (0.034)	0.0308 J (0.041)	ND (0.037)	ND (0.036)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.0191 J (0.041)	0.0426 J (0.09)	0.0204 J (0.036)	ND (0.036)	ND (0.033)	0.0158 J (0.038)	ND (0.034)	ND (0.041)	ND (0.35)	ND (7)	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.138 (0.041)	0.609 (0.09)	0.26 (0.036)	0.0474 (0.036)	0.0219 J (0.033)	0.329 (0.038)	0.0321 J (0.034)	0.425 (0.041)	0.0283 J (0.037)	0.154 (0.036)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.202 (0.041)	0.73 (0.09)	0.34 (0.036)	0.108 (0.036)	0.0613 (0.033)	1.36 (0.038)	0.0774 (0.034)	0.469 (0.041)	0.0804 (0.037)	0.601 (0.036)	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	ND (0.0006)
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	ND (0.0006)
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	ND (0.0006)
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	ND (0.0006)
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	0.00058 (0.0006)
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0006)	ND (0.00051)	ND (0.00056)	ND (0.0006)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6 BH-12-138 Unassigned 0.0 - 1.0 12/5/2012	AOI6 BH-12-138 Unassigned 2.0 - 2.5 12/5/2012	AOI6 BH-12-139 Unassigned 1.0 - 1.5 12/5/2012	AOI6 BH-12-140 Unassigned 0.0 - 0.5 12/5/2012	AOI6 BH-12-144 Unassigned 0.0 - 0.5 12/5/2012	AOI6 BH-12-146 Unassigned 0.0 - 1.0 12/5/2012	AOI6 BH-12-147 Tank Group 07A 1.0 - 1.5 12/5/2012	AOI6 BH-12-148 Tank Group 07A 0.0 - 1.0 12/5/2012	AOI6 BH-12-149 Tank Group 07 1.0 - 1.5 12/4/2012	AOI6 BH-12-149 Tank Group 07 2.5 - 3.0 12/4/2012	AOI6_B001 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B002 Unassigned 0.0 - 1.0 6/24/2022	AOI6_B003 Tank Group 07 0.0 - 1.0 6/24/2022	AOI6_B004 Unassigned 0.0 - 1.0 6/27/2022
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	483 (2.3)	1150 (2.9)	1120 (2.3)	766 (7.7)	17.1 (2.1)	184 (2.4)	286 (2.3)	745 (2.3)	27.9 (2.6)	127 (2.2)	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6_B005 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B006 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B007 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B008 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B009 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B010 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B011 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B012 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B013 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B014 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B015 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B016 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B017 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B018 Unassigned 0.0 - 1.0 6/27/2022
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	ND (0.0006)	ND (0.00056)	ND (0.00059)	ND (0.00061)	ND (0.00059)	ND (0.00082)	ND (0.00065)	ND (0.00056)	ND (0.00056)	ND (0.00064)	ND (0.00069)	ND (0.00061)	ND (0.00064)	ND (0.00058)
Perfluoroheptanoic Acid (PFHpA)	--	--	ND (0.0006)	ND (0.00056)	ND (0.00059)	ND (0.00061)	ND (0.00059)	0.0013 (0.00082)	ND (0.00065)	ND (0.00056)	ND (0.00056)	ND (0.00064)	ND (0.00069)	ND (0.00061)	ND (0.00064)	ND (0.00058)
Perfluorohexanesulfonic Acid (PFHxS)	--	--	ND (0.0006)	ND (0.00056)	ND (0.00059)	ND (0.00061)	ND (0.00059)	ND (0.00082)	ND (0.00065)	ND (0.00056)	ND (0.00056)	ND (0.00064)	0.0018 (0.00069)	ND (0.00061)	ND (0.00064)	0.00073 (0.00058)
Perfluorononanoic Acid (PFNA)	--	--	ND (0.0006)	ND (0.00056)	ND (0.00059)	ND (0.00061)	0.00068 (0.00059)	0.0016 (0.00082)	ND (0.00065)	0.0029 (0.00056)	ND (0.00056)	ND (0.0032)	0.00037 (0.00069)	ND (0.00061)	ND (0.00064)	0.0019 (0.00058)
Perfluorooctanesulfonic Acid (PFOS)	64	--	ND (0.0006)	ND (0.00056)	ND (0.00059)	0.00043 (0.00061)	0.0007 (0.00059)	0.0021 (0.00082)	0.00091 (0.00065)	0.00085 (0.00056)	0.00047 (0.00056)	0.0137 (0.00064)	0.0131 (0.00069)	0.00024 (0.00061)	ND (0.00064)	0.0232 (0.00058)
Perfluorooctanoic Acid (PFOA)	64	--	ND (0.0006)	ND (0.00056)	0.00052 (0.00059)	ND (0.00061)	ND (0.00059)	0.0012 (0.00082)	ND (0.00065)	0.00048 (0.00056)	ND (0.00056)	0.0011 (0.00064)	ND (0.00069)	ND (0.00061)	ND (0.00064)	ND (0.00058)

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Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
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J - Estimated Concentration
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Tank Group 06 and 07
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Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6_B019 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B020 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B021 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B022 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B023 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B024 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B025 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B026 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B027 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B028 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B029 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B030 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B031 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B032 Unassigned 0.0 - 1.0 6/28/2022
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	ND (0.0006)	ND (0.00059)	ND (0.00061)	ND (0.00061)	ND (0.0007)	ND (0.00055)	ND (0.00053)	ND (0.00055)	ND (0.00063)	ND (0.00062)	ND (0.00064)	ND (0.00059)	ND (0.00056)	ND (0.0006)
Perfluoroheptanoic Acid (PFHpA)	--	--	ND (0.0006)	ND (0.00059)	ND (0.00061)	ND (0.00061)	0.00036 (0.0007)	ND (0.00055)	0.0003 (0.00053)	ND (0.00055)	ND (0.00063)	ND (0.00062)	ND (0.00064)	ND (0.00059)	ND (0.00056)	ND (0.0006)
Perfluorohexanesulfonic Acid (PFHxS)	--	--	ND (0.0006)	0.00073 (0.00059)	ND (0.00061)	ND (0.00061)	ND (0.0007)	ND (0.00055)	ND (0.00053)	ND (0.00055)	0.00095 (0.00063)	ND (0.00062)	ND (0.00064)	0.002 (0.00059)	0.0068 (0.00056)	ND (0.0006)
Perfluorononanoic Acid (PFNA)	--	--	0.00076 (0.0006)	0.00098 (0.00059)	ND (0.00061)	0.0011 (0.00061)	0.0014 (0.0007)	ND (0.00055)	0.00042 (0.00053)	0.00036 (0.00055)	0.00055 (0.00063)	ND (0.00062)	ND (0.00064)	0.0032 (0.00059)	0.0025 (0.00056)	ND (0.0006)
Perfluorooctanesulfonic Acid (PFOS)	64	--	0.00088 (0.0006)	0.0074 (0.00059)	ND (0.00061)	0.001 (0.00061)	ND (0.0007)	0.00032 (0.00055)	ND (0.00053)	0.0021 (0.00055)	0.0324 (0.00063)	0.00033 (0.00062)	0.00032 (0.00064)	0.0093 (0.00059)	0.0422 (0.00056)	0.00045 (0.0006)
Perfluorooctanoic Acid (PFOA)	64	--	ND (0.0006)	ND (0.00059)	ND (0.00061)	ND (0.00061)	ND (0.0007)	ND (0.00055)	0.0003 (0.00053)	ND (0.00055)	0.00046 (0.00063)	ND (0.00062)	ND (0.00064)	0.00033 (0.00059)	0.0012 (0.00056)	ND (0.0006)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6_B019 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B020 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B021 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B022 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B023 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B024 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B025 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B026 Unassigned 0.0 - 1.0 6/27/2022	AOI6_B027 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B028 Tank Group 07 0.0 - 1.0 6/28/2022	AOI6_B029 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B030 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B031 Unassigned 0.0 - 1.0 6/28/2022	AOI6_B032 Unassigned 0.0 - 1.0 6/28/2022
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6_B033	AOI6_B034	AOI6_B035	AOI6_B035	AOI6-BH-16-001	AOI6-BH-16-002	AOI6-BH-16-003	AOI6-BH-16-004	AOI6-BH-16-004	AOI6-BH-16-004	AOI6-BH-16-005	AOI6-BH-16-006	AOI6-BH-16-006	AOI6-BH-16-007
Area			Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned
Collection Depth (ft bgs)			0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	1.0 - 1.5	1.0 - 1.5	0.0 - 0.5	0.8 - 1.8	1.8 - 2.3	0.8 - 1.8	0.0 - 0.5	1.0 - 1.5	1.5 - 2.3	1.0 - 2.0
Sample Date			6/29/2022	6/29/2022	6/29/2022	6/29/2022	4/12/2016	4/12/2016	4/12/2016	4/21/2016	4/21/2016	4/21/2016	4/12/2016	4/22/2016	4/22/2016	4/8/2016
Comments						Field Duplicate						Field Duplicate				
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	NA	NA	NA	0.002 J (0.006)	0.001 J (0.005)	ND (0.005)	0.001 J (0.0005)	0.001 J (0.0005)	0.002 J (0.0005)	0.0004 J (0.004)	ND (0.028)	0.023 J (0.022)	0.003 J (0.006)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
Ethyl Benzene	880	70	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0009)	ND (0.0009)	0.001 J (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.004)	ND (0.028)	ND (0.022)	ND (0.006)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	0.003 J (0.006)	0.001 J (0.005)	ND (0.005)	0.003 J (0.0009)	0.002 J (0.0009)	0.003 J (0.001)	ND (0.004)	0.088 J (0.055)	0.073 J (0.044)	0.001 J (0.006)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	0.0009 J (0.0009)	ND (0.0009)	0.002 J (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.0009)	ND (0.0009)	ND (0.001)	ND (0.004)	ND (0.055)	ND (0.044)	ND (0.006)
Xylenes (total)	7900	1000	NA	NA	NA	NA	0.001 J (0.006)	ND (0.005)	ND (0.005)	0.004 J (0.0009)	0.001 J (0.0009)	0.005 J (0.001)	ND (0.004)	0.063 J (0.055)	0.065 J (0.044)	ND (0.006)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	0.73 (0.1)	0.34 (0.11)	0.41 (0.019)	0.43 (0.008)	0.55 (0.007)	0.6 (0.008)	0.016 J (0.018)	0.7 (0.008)	0.43 (0.007)	0.2 (0.02)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	0.95 (0.1)	1.7 (0.11)	1.9 (0.019)	1.1 (0.008)	1.6 (0.007)	1.7 (0.008)	0.11 (0.018)	1.2 (0.008)	0.75 (0.007)	0.72 (0.02)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	1.1 (0.1)	1.7 (0.11)	1.9 (0.019)	1.1 (0.008)	1.5 (0.007)	1.5 (0.008)	0.13 (0.018)	1.2 (0.008)	0.74 (0.007)	0.67 (0.02)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	1.5 (0.1)	2.2 (0.11)	2.6 (0.019)	1.3 (0.008)	1.7 (0.007)	1.9 (0.008)	0.18 (0.018)	1.3 (0.008)	1 (0.007)	0.95 (0.02)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	1.3 (0.1)	0.85 (0.11)	1.5 (0.019)	0.7 (0.008)	0.84 (0.007)	0.94 (0.008)	0.15 (0.018)	0.76 (0.008)	0.52 (0.007)	0.51 (0.02)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	1.1 (0.1)	1.7 (0.11)	1.9 (0.019)	1.1 (0.008)	1.5 (0.007)	1.7 (0.008)	0.12 (0.018)	1.3 (0.008)	0.82 (0.007)	0.85 (0.02)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	0.32 (0.1)	0.079 J (0.11)	0.11 (0.019)	0.16 (0.008)	0.2 (0.007)	0.19 (0.008)	0.005 J (0.018)	0.36 (0.008)	0.27 (0.007)	0.07 (0.02)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	6.9 (0.1)	0.63 (0.11)	0.51 (0.019)	1.2 (0.008)	1.1 (0.007)	1.3 (0.008)	0.025 (0.018)	1.6 (0.008)	1.6 (0.007)	0.63 (0.02)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	2 (0.1)	0.87 (0.11)	1.7 (0.019)	1.1 (0.008)	1.2 (0.007)	1.7 (0.008)	0.053 (0.018)	1.5 (0.008)	1.1 (0.007)	0.72 (0.02)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	1.6 (0.1)	2 (0.11)	2.8 (0.019)	1.3 (0.008)	1.9 (0.007)	2.3 (0.008)	0.15 (0.018)	2 (0.008)	1.2 (0.007)	1.2 (0.02)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	ND (0.00074)	ND (0.00063)	ND (0.00063)	ND (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	ND (0.00074)	ND (0.00063)	ND (0.00063)	ND (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	ND (0.00074)	ND (0.00063)	ND (0.00063)	ND (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	0.00058 (0.00074)	0.00062 (0.00063)	ND (0.00063)	ND (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	0.0044 (0.00074)	0.0011 (0.00063)	0.0032 (0.00063)	0.0032 (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	ND (0.00074)	ND (0.00063)	ND (0.00063)	ND (0.00064)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location		Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6_B033 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B034 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B035 Unassigned 0.0 - 1.0 6/29/2022	AOI6_B035 Unassigned 0.0 - 1.0 6/29/2022 Field Duplicate	AOI6-BH-16-001 Tank Group 07 1.0 - 1.5 4/12/2016	AOI6-BH-16-002 Unassigned 1.0 - 1.5 4/12/2016	AOI6-BH-16-003 Unassigned 0.0 - 0.5 4/12/2016	AOI6-BH-16-004 Tank Group 07 0.8 - 1.8 4/21/2016	AOI6-BH-16-004 Tank Group 07 1.8 - 2.3 4/21/2016	AOI6-BH-16-004 Tank Group 07 0.8 - 1.8 4/21/2016 Field Duplicate	AOI6-BH-16-005 Tank Group 07 0.0 - 0.5 4/12/2016	AOI6-BH-16-006 Tank Group 07 1.0 - 1.5 4/22/2016	AOI6-BH-16-006 Tank Group 07 1.5 - 2.3 4/22/2016	AOI6-BH-16-007 Unassigned 1.0 - 2.0 4/8/2016
Other				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																	
	Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1000	450	NA	NA	NA	NA	288 (1.24)	180 (1.4)	549 (1.63)	399 (0.411)	189 (0.398)	529 (0.452)	68.7 (1.05)	142 (0.51)	225 (0.435)	803 (1.32)
	Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-007 Unassigned 2.0 - 2.3 4/8/2016	AOI6-BH-16-008 Unassigned 1.0 - 2.0 4/8/2016	AOI6-BH-16-008 Unassigned 2.0 - 2.5 4/8/2016	AOI6-BH-16-009 Unassigned 1.5 - 1.8 4/8/2016	AOI6-BH-16-010 Tank Group 07 0.5 - 0.9 4/11/2016	AOI6-BH-16-011 Unassigned 0.5 - 0.8 4/11/2016	AOI6-BH-16-012 Unassigned 1.0 - 1.1 4/11/2016	AOI6-BH-16-012 Unassigned 0.5 - 1.0 4/11/2016	AOI6-BH-16-013 Unassigned 0.5 - 1.0 4/11/2016	AOI6-BH-16-014 Tank Group 07A 1.0 - 1.5 4/5/2016	AOI6-BH-16-014 Tank Group 07A 2.0 - 2.5 4/5/2016	AOI6-BH-16-014 Tank Group 07A 1.3 - 1.8 7/11/2016	AOI6-BH-16-014 Tank Group 07A 2.0 - 2.3 7/11/2016	AOI6-BH-16-015 Tank Group 07A 1.5 - 2.0 4/5/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.004 J (0.005)	0.001 J (0.005)	0.001 J (0.004)	0.005 J (0.006)	0.011 (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	0.24 J (0.33)	ND (0.44)	NA	NA	0.053 J (0.33)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	0.25 (0.23)	2 (0.25)	ND (0.23)	ND (0.33)	ND (0.44)	NA	NA	0.77 (0.33)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	ND (0.33)	ND (0.44)	NA	NA	ND (0.33)
1,2-Dichloroethane	85	0.5	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	ND (0.33)	ND (0.44)	NA	NA	ND (0.33)
Ethyl Benzene	880	70	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	0.095 J (0.33)	ND (0.44)	NA	NA	ND (0.33)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	ND (0.33)	ND (0.44)	NA	NA	ND (0.33)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	0.004 J (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	0.26 J (0.33)	0.29 J (0.44)	NA	NA	0.13 J (0.33)
1,2,4-Trimethylbenzene	4700	300	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	0.11 J (0.33)	ND (0.44)	NA	NA	0.11 J (0.33)
1,3,5-Trimethylbenzene	4700	93	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	ND (0.23)	ND (0.25)	ND (0.23)	ND (0.33)	ND (0.44)	NA	NA	ND (0.33)
Xylenes (total)	7900	1000	ND (0.005)	ND (0.005)	ND (0.004)	ND (0.006)	ND (0.005)	ND (0.27)	0.047 J (0.23)	0.061 J (0.25)	ND (0.23)	0.28 J (0.33)	0.1 J (0.44)	NA	NA	0.47 (0.33)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.84 (0.02)	2.3 (0.19)	1.8 (0.2)	4.3 (0.019)	0.079 (0.021)	1.7 (0.22)	0.69 (0.18)	1.3 (0.21)	0.4 (0.2)	NA	NA	6.2 (1.3)	12 (1.3)	NA
Benzo(a)anthracene	130	340	2.2 (0.02)	5.5 (0.19)	3.7 (0.2)	5.2 (0.19)	0.21 (0.021)	0.99 (0.22)	1.9 (0.18)	0.94 (0.21)	0.46 (0.2)	NA	NA	7.8 (1.3)	25 (1.3)	NA
Benzo(a)pyrene	91	46	1.8 (0.02)	4.8 (0.19)	2.9 (0.2)	3.3 (0.019)	0.26 (0.021)	0.99 (0.22)	1.8 (0.18)	0.89 (0.21)	0.28 (0.2)	NA	NA	8.3 (1.3)	26 (1.3)	NA
Benzo(b)fluoranthene	76	170	2.3 (0.02)	6.3 (0.19)	4 (0.2)	4 (0.019)	0.41 (0.021)	1.3 (0.22)	2.3 (0.18)	1.6 (0.21)	0.34 (0.2)	NA	NA	8.2 (1.3)	26 (1.3)	NA
Benzo(g,h,i)perylene	190000	180	1.2 (0.02)	3.3 (0.19)	2 (0.2)	1.9 (0.019)	0.23 (0.021)	0.69 (0.22)	1.4 (0.18)	0.74 (0.21)	0.21 (0.2)	NA	NA	6.3 (1.3)	15 (1.3)	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	2.1 (0.02)	5.6 (0.19)	3.7 (0.2)	5.1 (0.19)	0.28 (0.021)	1 (0.22)	1.8 (0.18)	2.7 (0.21)	1.6 (0.2)	NA	NA	8.9 (1.3)	30 (1.3)	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.31 (0.02)	1.7 (0.19)	1.7 (0.2)	1.4 (0.019)	0.012 J (0.021)	8.5 (0.22)	0.33 (0.18)	66 (0.42)	2.5 (0.2)	NA	NA	9.3 (1.3)	12 (1.3)	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.71 (0.02)	2.9 (0.19)	1.5 (0.2)	1.9 (0.019)	0.22 (0.021)	ND (0.22)	0.44 (0.18)	1.3 (0.21)	ND (0.2)	NA	NA	21 (1.3)	24 (1.3)	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	2.6 (0.02)	10 (0.19)	8.8 (0.2)	14 (0.19)	0.23 (0.021)	10 (0.22)	2 (0.18)	20 (0.21)	0.96 (0.2)	NA	NA	24 (1.3)	37 (1.3)	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	3.4 (0.02)	10 (0.19)	7.3 (0.2)	13 (0.19)	0.43 (0.021)	1.9 (0.22)	3.3 (0.18)	1.8 (0.21)	0.81 (0.2)	NA	NA	12 (1.3)	39 (1.3)	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-007 Unassigned 2.0 - 2.3 4/8/2016	AOI6-BH-16-008 Unassigned 1.0 - 2.0 4/8/2016	AOI6-BH-16-008 Unassigned 2.0 - 2.5 4/8/2016	AOI6-BH-16-009 Unassigned 1.5 - 1.8 4/8/2016	AOI6-BH-16-010 Tank Group 07 0.5 - 0.9 4/11/2016	AOI6-BH-16-011 Unassigned 0.5 - 0.8 4/11/2016	AOI6-BH-16-012 Unassigned 1.0 - 1.1 4/11/2016	AOI6-BH-16-012 Unassigned 0.5 - 1.0 4/11/2016	AOI6-BH-16-013 Unassigned 0.5 - 1.0 4/11/2016	AOI6-BH-16-014 Tank Group 07A 1.0 - 1.5 4/5/2016	AOI6-BH-16-014 Tank Group 07A 2.0 - 2.5 4/5/2016	AOI6-BH-16-014 Tank Group 07A 1.3 - 1.8 7/11/2016	AOI6-BH-16-014 Tank Group 07A 2.0 - 2.3 7/11/2016	AOI6-BH-16-015 Tank Group 07A 1.5 - 2.0 4/5/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	243 (1.63)	298 (1.35)	267 (1.48)	149 (1.16)	1460 (1.7)	734 (1.73)	194 (1.2)	141 (1.74)	32 (1.56)	344 (1.56)	352 (2.24)	NA	NA	671 (1.6)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-015	AOI6-BH-16-015	AOI6-BH-16-015	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-017	AOI6-BH-16-018	AOI6-BH-16-019	AOI6-BH-16-019	AOI6-BH-16-019	AOI6-BH-16-020	AOI6-BH-16-021
Area			Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			2.0 - 2.1	1.0 - 1.4	2.0 - 2.2	1.0 - 1.5	2.0 - 2.5	1.5 - 2.0	2.0 - 2.3	0.5 - 1.0	0.8 - 1.0	0.8 - 1.8	1.8 - 3.0	0.8 - 1.8	0.0 - 1.1	0.0 - 0.5
Sample Date			4/5/2016	7/11/2016	7/11/2016	4/4/2016	4/4/2016	7/11/2016	7/11/2016	4/11/2016	4/11/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016
Comments														Field Duplicate		
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.27)	NA	NA	0.004 J (0.006)	ND (0.34)	NA	NA	0.001 J (0.004)	0.071 (0.004)	ND (0.0006)	0.002 J (0.0006)	ND (0.0005)	0.039 J (0.03)	0.062 J (0.024)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	0.23 J (0.27)	NA	NA	ND (0.006)	0.44 (0.34)	NA	NA	ND (0.004)	0.001 J (0.004)	ND (0.001)	0.002 J (0.001)	ND (0.001)	0.42 (0.061)	ND (0.048)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.27)	NA	NA	ND (0.006)	ND (0.34)	NA	NA	ND (0.004)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.061)	ND (0.048)
1,2-Dichloroethane	85	0.5	ND (0.27)	NA	NA	ND (0.006)	ND (0.34)	NA	NA	ND (0.004)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.061)	ND (0.048)
Ethyl Benzene	880	70	ND (0.27)	NA	NA	ND (0.006)	ND (0.34)	NA	NA	ND (0.004)	0.001 J (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.061)	ND (0.048)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.27)	NA	NA	ND (0.006)	ND (0.34)	NA	NA	ND (0.004)	ND (0.004)	ND (0.0006)	ND (0.0006)	ND (0.0005)	ND (0.03)	ND (0.024)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.27)	NA	NA	0.003 J (0.006)	0.19 J (0.34)	NA	NA	ND (0.004)	0.005 (0.004)	ND (0.001)	0.002 J (0.001)	ND (0.001)	ND (0.061)	0.1 J (0.048)
1,2,4-Trimethylbenzene	4700	300	ND (0.27)	NA	NA	ND (0.006)	0.14 J (0.34)	NA	NA	ND (0.004)	0.001 J (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.061)	0.11 J (0.048)
1,3,5-Trimethylbenzene	4700	93	ND (0.27)	NA	NA	ND (0.006)	ND (0.34)	NA	NA	ND (0.004)	ND (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.061)	0.082 J (0.048)
Xylenes (total)	7900	1000	0.092 J (0.27)	NA	NA	ND (0.006)	0.16 J (0.34)	NA	NA	ND (0.004)	0.002 J (0.004)	ND (0.001)	ND (0.001)	ND (0.001)	0.072 J (0.061)	0.1 J (0.048)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	5.4 (2.1)	2.3 (0.24)	NA	NA	1.9 (0.24)	3.4 (0.25)	0.35 (0.019)	0.67 (0.19)	1.4 (0.009)	0.39 (0.009)	1.4 (0.008)	3.7 (0.019)	1 (0.007)
Benzo(a)anthracene	130	340	NA	2 J (2.1)	1.2 (0.24)	NA	NA	1.7 (0.24)	3.3 (0.25)	3.3 (0.019)	1.4 (0.19)	1.2 (0.009)	1.4 (0.009)	1.3 (0.008)	7.4 (0.019)	2.4 (0.007)
Benzo(a)pyrene	91	46	NA	1.6 J (2.1)	1.2 (0.24)	NA	NA	1.7 (0.24)	3.3 (0.25)	4.2 (0.019)	1.9 (0.19)	1.3 (0.009)	1.4 (0.009)	1.4 (0.008)	7.8 (0.019)	2.2 (0.007)
Benzo(b)fluoranthene	76	170	NA	2.9 (2.1)	1.2 (0.24)	NA	NA	2.3 (0.24)	3.6 (0.25)	6.7 (0.093)	2.3 (0.19)	1.5 (0.009)	1.7 (0.009)	1.7 (0.008)	9.8 (0.019)	3 (0.007)
Benzo(g,h,i)perylene	190000	180	NA	2.2 (2.1)	1.6 (0.24)	NA	NA	1.6 (0.24)	3.5 (0.25)	4.8 (0.093)	1.5 (0.19)	1.4 (0.009)	0.88 (0.009)	1.5 (0.008)	5.1 (0.019)	1.4 (0.007)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	5.8 (2.1)	2.4 (0.24)	NA	NA	2 (0.24)	3.7 (0.25)	4.9 (0.093)	1.9 (0.19)	1.3 (0.009)	1.4 (0.009)	1.4 (0.008)	7.7 (0.019)	2.3 (0.007)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	7.4 (2.1)	2.6 (0.24)	NA	NA	5.1 (0.24)	6.3 (0.25)	0.081 (0.019)	0.48 (0.19)	0.59 (0.009)	0.2 (0.009)	0.61 (0.008)	2.2 (0.019)	0.53 (0.007)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	2.8 (2.1)	6.3 (0.24)	NA	NA	9.3 (0.24)	18 (0.25)	0.12 (0.019)	2.1 (0.19)	7.7 (0.009)	1.5 (0.009)	8.3 (0.008)	3.3 (0.019)	1.1 (0.007)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	16 (2.1)	7.2 (0.24)	NA	NA	9.6 (0.24)	17 (0.25)	2.4 (0.019)	1.6 (0.19)	3.3 (0.009)	1.1 (0.009)	3.2 (0.008)	13 (0.019)	3.2 (0.007)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	8.4 (2.1)	3.2 (0.24)	NA	NA	2.4 (0.24)	4.2 (0.25)	8.1 (0.093)	2.4 (0.19)	1.6 (0.009)	1.4 (0.009)	1.6 (0.008)	13 (0.019)	3.9 (0.007)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI6-BH-16-015	AOI6-BH-16-015	AOI6-BH-16-015	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-016	AOI6-BH-16-017	AOI6-BH-16-018	AOI6-BH-16-019	AOI6-BH-16-019	AOI6-BH-16-019	AOI6-BH-16-020	AOI6-BH-16-021
Area			Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Tank Group 07A	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			2.0 - 2.1	1.0 - 1.4	2.0 - 2.2	1.0 - 1.5	2.0 - 2.5	1.5 - 2.0	2.0 - 2.3	0.5 - 1.0	0.8 - 1.0	0.8 - 1.8	1.8 - 3.0	0.8 - 1.8	0.0 - 1.1	0.0 - 0.5
Sample Date			4/5/2016	7/11/2016	7/11/2016	4/4/2016	4/4/2016	7/11/2016	7/11/2016	4/11/2016	4/11/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016	4/21/2016
Comments														Field Duplicate		
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	134 (1.91)	NA	NA	313 (1.47)	256 (2.02)	NA	NA	180 (7.26)	138 (1.3)	2920 (2.34)	1370 (2.81)	6690 (2.34)	199 (0.503)	223 (2.43)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-022	AOI6-BH-16-022	AOI6-BH-16-023	AOI6-BH-16-025	AOI6-BH-16-025	AOI6-BH-16-025	AOI6-BH-16-026	AOI6-BH-16-027	AOI6-BH-16-027	AOI6-BH-16-028	AOI6-BH-16-029	AOI6-BH-16-029	AOI6-BH-16-030	AOI6-BH-16-030
Area			Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07
Collection Depth (ft bgs)			0.5 - 1.0	2.3 - 2.5	1.5 - 1.9	1.5 - 1.9	1.9 - 2.2	1.5 - 1.9	0.4 - 1.3	1.8 - 2.0	2.5 - 2.8	0.3 - 0.5	1.8 - 2.0	2.3 - 2.5	1.5 - 2.0	2.5 - 2.8
Sample Date			4/6/2016	4/6/2016	4/21/2016	4/22/2016	4/22/2016	4/22/2016	4/22/2016	4/13/2016	4/13/2016	4/13/2016	4/13/2016	4/13/2016	4/14/2016	4/14/2016
Comments								Field Duplicate								
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.089 J (0.24)	ND (0.005)	0.13 J (0.047)	2.7 (0.022)	1400 J (2.4)	2.6 (0.021)	7.6 (0.022)	ND (0.005)	2.5 J (5.3)	0.46 (0.26)	0.99 (0.25)	4.5 (0.28)	9.4 (4.4)	130 (4.3)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.24)	ND (0.005)	0.34 J (0.094)	2.9 (0.045)	2200 J (48)	2.6 (0.043)	1.8 (0.044)	ND (0.005)	360 (53)	0.22 J (0.26)	1.7 (0.25)	10 (0.28)	18 (4.4)	710 (43)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.24)	ND (0.005)	ND (0.094)	ND (0.045)	ND (4.8)	ND (0.043)	ND (0.044)	ND (0.005)	ND (5.3)	ND (0.26)	ND (0.25)	ND (0.28)	ND (4.4)	ND (4.3)
1,2-Dichloroethane	85	0.5	ND (0.24)	ND (0.005)	ND (0.094)	ND (0.045)	ND (4.8)	ND (0.043)	ND (0.044)	ND (0.005)	ND (5.3)	ND (0.26)	ND (0.25)	ND (0.28)	ND (4.4)	ND (4.3)
Ethyl Benzene	880	70	0.052 J (0.24)	ND (0.005)	0.1 J (0.094)	0.12 J (0.045)	61 J (4.8)	0.11 J (0.043)	0.082 J (0.044)	ND (0.005)	ND (5.3)	0.1 J (0.26)	0.3 (0.25)	0.81 (0.28)	ND (4.4)	ND (4.3)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.24)	ND (0.005)	ND (0.047)	ND (0.022)	ND (2.4)	ND (0.021)	ND (0.022)	ND (0.005)	ND (5.3)	ND (0.26)	ND (0.25)	ND (0.28)	ND (4.4)	ND (4.3)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.15 J (0.24)	ND (0.005)	0.2 J (0.094)	0.9 (0.045)	640 J (4.8)	0.75 (0.043)	ND (0.044)	ND (0.005)	3.9 J (5.3)	0.45 (0.26)	0.37 (0.25)	1.2 (0.28)	ND (4.4)	20 (4.3)
1,2,4-Trimethylbenzene	4700	300	ND (0.24)	ND (0.005)	0.12 J (0.094)	0.095 J (0.045)	50 J (4.8)	0.096 J (0.043)	ND (0.044)	ND (0.005)	10 (5.3)	0.057 J (0.26)	0.25 J (0.25)	1 (0.28)	ND (4.4)	ND (4.3)
1,3,5-Trimethylbenzene	4700	93	ND (0.24)	ND (0.005)	ND (0.094)	0.045 J (0.045)	18 J (4.8)	ND (0.043)	ND (0.044)	ND (0.005)	9.3 (5.3)	ND (0.26)	0.095 J (0.25)	0.48 (0.28)	ND (4.4)	ND (4.3)
Xylenes (total)	7900	1000	0.18 J (0.24)	ND (0.005)	0.21 J (0.094)	0.53 (0.045)	340 J (4.8)	0.48 (0.043)	0.092 J (0.044)	ND (0.005)	3.3 J (5.3)	0.34 (0.26)	0.6 (0.25)	1.5 (0.28)	ND (4.4)	2.9 J (4.3)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	2.1 (0.097)	0.05 (0.019)	2.1 (0.01)	4.4 (0.018)	1.2 (0.004)	4.9 (0.018)	0.71 (0.015)	0.007 J (0.022)	3.4 (0.1)	0.39 (0.092)	2.9 (0.095)	2.2 (0.095)	0.037 J (0.095)	0.16 (0.019)
Benzo(a)anthracene	130	340	3.4 (0.097)	0.13 (0.019)	1.3 (0.01)	3.2 (0.018)	1.1 (0.004)	3.8 (0.018)	1.3 (0.015)	0.011 J (0.022)	2.3 (0.1)	0.91 (0.092)	6.1 (0.095)	2.8 (0.095)	0.094 J (0.095)	0.079 (0.019)
Benzo(a)pyrene	91	46	4.1 (0.097)	0.14 (0.019)	1.7 (0.01)	2.3 (0.018)	0.69 (0.004)	2.7 (0.018)	1.3 (0.015)	0.01 J (0.022)	1.7 (0.1)	1.2 (0.092)	6.2 (0.095)	2.6 (0.095)	0.12 (0.095)	0.079 (0.019)
Benzo(b)fluoranthene	76	170	5.3 (0.097)	0.2 (0.019)	1.8 (0.01)	2.8 (0.018)	1 (0.004)	3.2 (0.018)	0.89 (0.015)	0.016 J (0.022)	1.7 (0.1)	1.6 (0.092)	8.7 (0.095)	3.5 (0.095)	0.18 (0.095)	0.18 (0.019)
Benzo(g,h,i)perylene	190000	180	3.3 (0.097)	0.11 (0.019)	1.8 (0.01)	0.93 (0.018)	0.33 (0.004)	1 (0.018)	0.72 (0.015)	0.009 J (0.022)	1 (0.1)	1.1 (0.092)	4.5 (0.095)	1.7 (0.095)	0.13 (0.095)	0.073 (0.019)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	4.9 (0.097)	0.14 (0.019)	1.5 (0.01)	2.8 (0.018)	0.97 (0.004)	3.2 (0.018)	2.2 (0.015)	0.021 J (0.022)	4 (0.1)	1 (0.092)	6.1 (0.095)	3.3 (0.095)	0.098 (0.095)	0.094 (0.019)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	1.6 (0.097)	0.019 J (0.019)	1.9 (0.01)	4.2 (0.018)	0.85 (0.004)	4.4 (0.018)	0.51 (0.015)	0.009 J (0.022)	6.3 (0.1)	0.16 (0.092)	3.2 (0.095)	8.4 (0.095)	ND (0.095)	0.034 (0.019)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	3.5 (0.097)	0.045 (0.019)	12 (0.01)	0.46 (0.018)	2 (0.004)	0.48 (0.018)	1.1 (0.015)	0.01 J (0.022)	7.8 (0.1)	1.2 (0.092)	3.1 (0.095)	4.8 (0.095)	0.024 J (0.095)	2.4 (0.019)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	5.4 (0.097)	0.16 (0.019)	4.8 (0.01)	13 (0.018)	4.1 (0.004)	14 (0.018)	1.9 (0.015)	0.02 J (0.022)	13 (0.1)	1.1 (0.092)	11 (0.095)	10 (0.095)	0.054 J (0.095)	3.3 (0.019)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	7.9 (0.097)	0.21 (0.019)	2.4 (0.01)	5.6 (0.018)	2.1 (0.004)	6.6 (0.018)	2.1 (0.015)	0.032 (0.022)	6.2 (0.1)	1.2 (0.092)	11 (0.095)	5.8 (0.095)	0.13 (0.095)	0.14 (0.019)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-022 Unassigned 0.5 - 1.0 4/6/2016	AOI6-BH-16-022 Unassigned 2.3 - 2.5 4/6/2016	AOI6-BH-16-023 Unassigned 1.5 - 1.9 4/21/2016	AOI6-BH-16-025 Tank Group 07 1.5 - 1.9 4/22/2016	AOI6-BH-16-025 Tank Group 07 1.9 - 2.2 4/22/2016	AOI6-BH-16-025 Tank Group 07 1.5 - 1.9 4/22/2016 Field Duplicate	AOI6-BH-16-026 Tank Group 07 0.4 - 1.3 4/22/2016	AOI6-BH-16-027 Tank Group 07 1.8 - 2.0 4/13/2016	AOI6-BH-16-027 Tank Group 07 2.5 - 2.8 4/13/2016	AOI6-BH-16-028 Unassigned 0.3 - 0.5 4/13/2016	AOI6-BH-16-029 Unassigned 1.8 - 2.0 4/13/2016	AOI6-BH-16-029 Unassigned 2.3 - 2.5 4/13/2016	AOI6-BH-16-030 Tank Group 07 1.5 - 2.0 4/14/2016	AOI6-BH-16-030 Tank Group 07 2.5 - 2.8 4/14/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	236 (1.42)	101 (1.5)	393 (0.593)	10.3 (0.465)	64.3 (0.382)	10.2 (0.48)	61.8 (0.405)	20 (1.63)	90.6 (1.43)	159 (1.11)	138 (1.15)	137 (1.26)	66 (1.18)	34.3 (1.35)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-031 Unassigned 1.0 - 2.0 4/14/2016	AOI6-BH-16-031 Unassigned 2.0 - 2.5 4/14/2016	AOI6-BH-16-032 Tank Group 07 1.0 - 2.0 4/13/2016	AOI6-BH-16-032 Tank Group 07 2.0 - 2.5 4/13/2016	AOI6-BH-16-033 Tank Group 07 1.5 - 2.0 4/13/2016	AOI6-BH-16-033 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-034 Tank Group 07 1.5 - 1.8 4/13/2016	AOI6-BH-16-034 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-035 Tank Group 07 1.5 - 2.0 4/13/2016	AOI6-BH-16-035 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-036 Tank Group 07 1.3 - 1.8 4/14/2016	AOI6-BH-16-036 Tank Group 07 2.0 - 2.3 4/14/2016	AOI6-BH-16-037 Tank Group 07 1.0 - 1.8 4/14/2016	AOI6-BH-16-037 Tank Group 07 1.8 - 2.3 4/14/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.63 (0.22)	27 (2)	0.12 J (0.22)	3.7 (0.77)	0.003 J (0.004)	ND (0.21)	44 (5)	96 (4.7)	0.001 J (0.004)	0.002 J (0.004)	0.55 J (4.5)	0.7 J (4.2)	710 (94)	850 (97)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	4 (0.22)	180 (3.9)	1.7 (0.22)	110 (3.9)	0.019 (0.004)	0.13 J (0.21)	230 (5)	360 (47)	0.021 (0.004)	0.083 (0.004)	59 (4.5)	180 (4.2)	6500 (760)	8500 (970)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.22)	ND (2)	ND (0.22)	ND (0.77)	ND (0.004)	ND (0.21)	ND (5)	ND (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
1,2-Dichloroethane	85	0.5	ND (0.22)	ND (2)	ND (0.22)	ND (0.77)	ND (0.004)	ND (0.21)	ND (5)	ND (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
Ethyl Benzene	880	70	0.053 J (0.22)	2.9 (2)	0.051 J (0.22)	3.6 (0.77)	ND (0.004)	ND (0.21)	ND (5)	1.2 J (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.22)	ND (2)	ND (0.22)	ND (0.77)	ND (0.004)	ND (0.21)	ND (5)	ND (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.22)	22 (2)	0.091 J (0.22)	45 (0.77)	ND (0.004)	ND (0.21)	38 (5)	81 (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	840 (94)	1200 (97)
1,2,4-Trimethylbenzene	4700	300	ND (0.22)	0.96 J (2)	ND (0.22)	0.7 J (0.77)	ND (0.004)	ND (0.21)	ND (5)	ND (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
1,3,5-Trimethylbenzene	4700	93	ND (0.22)	0.44 J (2)	ND (0.22)	0.37 J (0.77)	ND (0.004)	ND (0.21)	ND (5)	ND (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	ND (94)	ND (97)
Xylenes (total)	7900	1000	0.083 J (0.22)	12 (2)	0.13 J (0.22)	17 (0.77)	ND (0.004)	ND (0.21)	2.1 J (5)	3.8 J (4.7)	ND (0.004)	ND (0.004)	ND (4.5)	ND (4.2)	26 J (94)	27 J (97)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.019)	0.014 J (0.019)	0.008 J (0.018)	0.004 J (0.018)	0.03 J (0.092)	0.006 J (0.018)	0.027 (0.019)	ND (0.092)	ND (0.019)	0.004 J (0.019)	0.064 J (0.094)	0.036 (0.018)	0.068 J (0.1)	0.11 (0.02)
Benzo(a)anthracene	130	340	0.004 J (0.019)	0.014 J (0.019)	0.032 (0.018)	0.014 J (0.018)	0.12 (0.092)	0.026 (0.018)	0.09 (0.019)	0.05 J (0.092)	0.008 J (0.019)	0.015 J (0.019)	0.35 (0.094)	0.086 (0.018)	0.11 (0.1)	0.05 (0.02)
Benzo(a)pyrene	91	46	0.006 J (0.019)	0.012 J (0.019)	0.036 (0.018)	0.013 J (0.018)	0.13 (0.092)	0.028 (0.018)	0.092 (0.019)	0.039 J (0.092)	0.009 J (0.019)	0.02 (0.019)	0.3 (0.094)	0.088 (0.018)	0.16 (0.1)	0.074 (0.02)
Benzo(b)fluoranthene	76	170	0.007 J (0.019)	0.019 (0.019)	0.049 (0.018)	0.021 (0.018)	0.18 (0.092)	0.032 (0.018)	0.13 (0.019)	0.084 J (0.092)	0.014 J (0.019)	0.022 (0.019)	0.57 (0.094)	0.12 (0.018)	0.24 (0.1)	0.11 (0.02)
Benzo(g,h,i)perylene	190000	180	0.005 J (0.019)	0.008 J (0.019)	0.032 (0.018)	0.016 J (0.018)	0.13 (0.092)	0.029 (0.018)	0.083 (0.019)	0.042 J (0.092)	0.01 J (0.019)	0.024 (0.019)	0.27 (0.094)	0.083 (0.018)	0.19 (0.1)	0.07 (0.02)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.005 J (0.019)	0.02 (0.019)	0.038 (0.018)	0.018 J (0.018)	0.14 (0.092)	0.032 (0.018)	0.11 (0.019)	0.095 (0.092)	0.01 J (0.019)	0.02 (0.019)	0.41 (0.094)	0.1 (0.018)	0.14 (0.1)	0.053 (0.02)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.019)	0.047 (0.019)	ND (0.018)	0.008 J (0.018)	ND (0.092)	ND (0.018)	0.017 J (0.019)	0.033 J (0.092)	ND (0.019)	ND (0.019)	0.035 J (0.094)	0.01 J (0.018)	0.049 J (0.1)	0.033 (0.02)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.019)	0.062 (0.019)	ND (0.018)	0.029 (0.018)	ND (0.092)	0.014 J (0.018)	0.07 (0.019)	0.16 (0.092)	ND (0.019)	ND (0.019)	0.099 (0.094)	0.018 J (0.018)	1.3 (0.1)	1.4 (0.02)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.004 J (0.019)	0.059 (0.019)	0.025 (0.018)	0.013 J (0.018)	0.058 J (0.092)	0.011 J (0.018)	0.087 (0.019)	0.12 (0.092)	0.01 J (0.019)	0.014 J (0.019)	0.26 (0.094)	0.077 (0.018)	0.18 (0.1)	3.2 (0.02)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.007 J (0.019)	0.033 (0.019)	0.057 (0.018)	0.025 (0.018)	0.19 (0.092)	0.042 (0.018)	0.16 (0.019)	0.12 (0.092)	0.015 J (0.019)	0.026 (0.019)	0.51 (0.094)	0.16 (0.018)	0.22 (0.1)	0.084 (0.02)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-031 Unassigned 1.0 - 2.0 4/14/2016	AOI6-BH-16-031 Unassigned 2.0 - 2.5 4/14/2016	AOI6-BH-16-032 Tank Group 07 1.0 - 2.0 4/13/2016	AOI6-BH-16-032 Tank Group 07 2.0 - 2.5 4/13/2016	AOI6-BH-16-033 Tank Group 07 1.5 - 2.0 4/13/2016	AOI6-BH-16-033 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-034 Tank Group 07 1.5 - 1.8 4/13/2016	AOI6-BH-16-034 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-035 Tank Group 07 1.5 - 2.0 4/13/2016	AOI6-BH-16-035 Tank Group 07 2.0 - 2.3 4/13/2016	AOI6-BH-16-036 Tank Group 07 1.3 - 1.8 4/14/2016	AOI6-BH-16-036 Tank Group 07 2.0 - 2.3 4/14/2016	AOI6-BH-16-037 Tank Group 07 1.0 - 1.8 4/14/2016	AOI6-BH-16-037 Tank Group 07 1.8 - 2.3 4/14/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	5.63 (1.43)	6.19 (1.47)	10.3 (1.12)	10.6 (1.35)	12.8 (1.2)	9.85 (1.18)	14 (1.5)	15.3 (1.17)	10 (1.66)	10.9 (1.56)	60.8 (1.33)	18.9 (1.2)	100 (1.46)	105 (1.72)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-038 Tank Group 07 1.5 - 1.8 4/14/2016	AOI6-BH-16-039 Unassigned 0.5 - 0.6 4/11/2016	AOI6-BH-16-040 Unassigned 0.5 - 0.8 4/7/2016	AOI6-BH-16-040 Unassigned 1.8 - 2.0 4/7/2016	AOI6-BH-16-041 Tank Group 07 0.8 - 1.3 4/7/2016	AOI6-BH-16-041 Tank Group 07 1.8 - 2.3 4/7/2016	AOI6-BH-16-043 Unassigned 2.0 - 2.5 4/7/2016	AOI6-BH-16-043 Unassigned 0.5 - 1.0 4/7/2016	AOI6-BH-17-01 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-02 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-03 Tank Group 07 0.0 - 2.0 1/6/2017	AOI6-BH-17-04 Tank Group 07 0.0 - 2.0 1/6/2017	AOI6-BH-17-05 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-09 Unassigned 0.0 - 2.0 1/6/2017
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	8.8 (4.8)	ND (0.005)	1.1 J (1.1)	1.4 J (4.9)	NA	4.3 (3.2)	1.3 (0.24)	0.81 (0.22)	NA	NA	NA	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	14 (4.8)	ND (0.005)	1.2 (1.1)	6.4 (4.9)	NA	6.4 (3.2)	0.23 J (0.24)	0.055 J (0.22)	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (4.8)	ND (0.005)	ND (1.1)	ND (4.9)	NA	ND (3.2)	ND (0.24)	ND (0.22)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (4.8)	ND (0.005)	ND (1.1)	ND (4.9)	NA	ND (3.2)	ND (0.24)	ND (0.22)	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (4.8)	ND (0.005)	0.76 J (1.1)	13 (4.9)	NA	17 (3.2)	0.13 J (0.24)	0.064 J (0.22)	NA	NA	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (4.8)	ND (0.005)	ND (1.1)	ND (4.9)	NA	ND (3.2)	ND (0.24)	ND (0.22)	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (4.8)	ND (0.005)	ND (1.1)	ND (4.9)	NA	2.5 J (3.2)	0.32 (0.24)	0.19 J (0.22)	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	ND (4.8)	ND (0.005)	0.33 J (1.1)	8.1 (4.9)	NA	47 (3.2)	0.088 J (0.24)	0.045 J (0.22)	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (4.8)	ND (0.005)	0.38 J (1.1)	5.8 (4.9)	NA	22 (3.2)	0.081 J (0.24)	0.046 J (0.22)	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	ND (4.8)	ND (0.005)	0.88 J (1.1)	2.7 J (4.9)	NA	39 (3.2)	0.56 (0.24)	0.33 (0.22)	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.073 J (0.094)	0.005 J (0.023)	1.7 (0.19)	5.9 (0.18)	6.2 (0.2)	2.7 (0.21)	0.29 (0.093)	0.26 (0.091)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.19 (0.094)	0.019 J (0.023)	3.1 (0.19)	5 (0.18)	12 (0.2)	5.8 (0.21)	0.9 (0.093)	0.71 (0.091)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	0.22 (0.094)	0.019 J (0.023)	2.2 (0.19)	4.9 (0.18)	8 (0.2)	5.3 (0.21)	1.5 (0.093)	1.1 (0.091)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	0.33 (0.094)	0.033 (0.023)	3.2 (0.19)	6.3 (0.18)	14 (0.2)	7.8 (0.21)	1.9 (0.093)	1.5 (0.091)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.2 (0.094)	0.015 J (0.023)	1.2 (0.19)	3.1 (0.18)	5.1 (0.2)	3.9 (0.21)	1.4 (0.093)	1.3 (0.091)	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.22 (0.094)	0.025 (0.023)	2.9 (0.19)	5.1 (0.18)	12 (0.2)	5.6 (0.21)	1.1 (0.093)	0.78 (0.091)	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.036 J (0.094)	ND (0.023)	1.6 (0.19)	6.4 (0.18)	6.8 (0.2)	2.8 (0.21)	0.09 J (0.093)	0.05 J (0.091)	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.093 J (0.094)	0.006 J (0.023)	3.2 (0.19)	36 (0.18)	22 (0.2)	12 (0.21)	0.42 (0.093)	0.27 (0.091)	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.18 (0.094)	0.016 J (0.023)	6.7 (0.19)	21 (0.18)	25 (0.2)	13 (0.21)	0.58 (0.093)	0.42 (0.091)	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.28 (0.094)	0.033 (0.023)	6.4 (0.19)	9.7 (0.18)	21 (0.2)	11 (0.21)	0.9 (0.093)	0.86 (0.091)	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-16-038 Tank Group 07 1.5 - 1.8 4/14/2016	AOI6-BH-16-039 Unassigned 0.5 - 0.6 4/11/2016	AOI6-BH-16-040 Unassigned 0.5 - 0.8 4/7/2016	AOI6-BH-16-040 Unassigned 1.8 - 2.0 4/7/2016	AOI6-BH-16-041 Tank Group 07 0.8 - 1.3 4/7/2016	AOI6-BH-16-041 Tank Group 07 1.8 - 2.3 4/7/2016	AOI6-BH-16-043 Unassigned 2.0 - 2.5 4/7/2016	AOI6-BH-16-043 Unassigned 0.5 - 1.0 4/7/2016	AOI6-BH-17-01 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-02 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-03 Tank Group 07 0.0 - 2.0 1/6/2017	AOI6-BH-17-04 Tank Group 07 0.0 - 2.0 1/6/2017	AOI6-BH-17-05 Unassigned 0.0 - 2.0 1/6/2017	AOI6-BH-17-09 Unassigned 0.0 - 2.0 1/6/2017
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	33.1 (1.14)	7.22 (1.42)	249 (1.36)	142 (1.38)	3820 (8.47)	196 (1.27)	1720 (7.19)	331 (1.39)	211 (1.33)	234 (7.7)	899 (1.2)	7490 (17.7)	770 (1.29)	34.3 (1.23)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-19-001 Tank Group 07 0.0 - 2.0 4/15/2019	AOI6-BH-19-003 Tank Group 07 0.0 - 2.0 4/17/2019	AOI6-BH-19-003 Tank Group 07 2.0 - 2.5 4/17/2019	AOI6-BH-19-004 Unassigned 0.0 - 2.0 4/18/2019	AOI6-BH-19-004 Unassigned 2.0 - 2.5 4/18/2019	AOI6-BH-19-005 Tank Group 07 0.0 - 2.0 5/7/2019	AOI6-BH-19-005 Tank Group 07 2.0 - 2.5 5/7/2019	AOI6-BH-21-01 Unassigned 0.0 - 2.0 4/7/2021	AOI7 BH-12-100 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-43 Tank Group 06 2.0 - 2.5 11/28/2012	AOI7 BH-12-45 Unassigned 3.0 - 3.5 11/29/2012	AOI7 BH-12-46 Unassigned 0.0 - 0.5 11/29/2012	AOI7 BH-12-47 Unassigned 1.0 - 1.5 11/29/2012	AOI7 BH-12-48 Unassigned 2.5 - 3.0 11/30/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	13.7 (0.0834)	18.1 (0.0237)	2.1 (0.00111)	0.755 (0.00909)	7.02 (0.00889)	0.223 (0.00106)	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	ND (0.092)	ND (0.0012)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0046)	ND (0.004)	ND (0.0063)	ND (0.0041)	ND (0.46)	ND (0.0062)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	ND (0.092)	ND (0.0012)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	ND (0.092)	ND (0.0012)
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	ND (0.092)	ND (0.0012)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	ND (0.092)	ND (0.0012)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	ND (0.0013)	ND (0.00082)	0.288 (0.092)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0046)	ND (0.004)	ND (0.0063)	ND (0.0041)	ND (0.46)	ND (0.0062)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0046)	ND (0.004)	ND (0.0063)	ND (0.0041)	ND (0.46)	ND (0.0062)
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00091)	ND (0.004)	0.0021 (0.0013)	ND (0.00082)	0.111 (0.092)	ND (0.0012)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	0.159 (0.033)	0.59 (0.19)	1.04 (0.04)	ND (0.032)	ND (0.39)	0.82 (0.084)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	0.818 (0.033)	1.8 (0.19)	2.16 (0.04)	0.139 (0.032)	3.38 (0.39)	0.8 (0.084)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	0.796 (0.033)	2 (0.19)	2.89 (0.04)	0.129 (0.032)	0.731 (0.39)	1.02 (0.084)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	0.821 (0.033)	2.6 (0.19)	2.82 (0.04)	0.177 (0.032)	ND (0.39)	0.717 (0.084)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	0.489 (0.033)	1.4 (0.19)	1.93 (0.04)	0.166 (0.032)	ND (0.39)	1.14 (0.084)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	0.768 (0.033)	2 (0.19)	2.35 (0.04)	0.199 (0.032)	1.82 (0.39)	1.6 (0.084)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	0.0385 (0.033)	0.26 (0.19)	1.14 (0.04)	ND (0.032)	0.418 (0.39)	0.217 (0.084)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0046)	0.54 (0.19)	ND (0.0063)	ND (0.0041)	ND (0.46)	ND (0.0062)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	0.469 (0.033)	1.7 (0.19)	1.42 (0.04)	0.183 (0.032)	2.95 (0.39)	1.25 (0.084)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	0.835 (0.033)	3 (0.19)	3.39 (0.04)	0.237 (0.032)	ND (0.39)	2.1 (0.084)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI6-BH-19-001 Tank Group 07 0.0 - 2.0 4/15/2019	AOI6-BH-19-003 Tank Group 07 0.0 - 2.0 4/17/2019	AOI6-BH-19-003 Tank Group 07 2.0 - 2.5 4/17/2019	AOI6-BH-19-004 Unassigned 0.0 - 2.0 4/18/2019	AOI6-BH-19-004 Unassigned 2.0 - 2.5 4/18/2019	AOI6-BH-19-005 Tank Group 07 0.0 - 2.0 5/7/2019	AOI6-BH-19-005 Tank Group 07 2.0 - 2.5 5/7/2019	AOI6-BH-21-01 Unassigned 0.0 - 2.0 4/7/2021	AOI7 BH-12-100 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-43 Tank Group 06 2.0 - 2.5 11/28/2012	AOI7 BH-12-45 Unassigned 3.0 - 3.5 11/29/2012	AOI7 BH-12-46 Unassigned 0.0 - 0.5 11/29/2012	AOI7 BH-12-47 Unassigned 1.0 - 1.5 11/29/2012	AOI7 BH-12-48 Unassigned 2.5 - 3.0 11/30/2012
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	1490 (0.583)	NA	NA	NA	NA	NA	NA	360 (2)	135 (2.3)	119 (0.552)	758 (2.7)	121 (7)	2060 (2.8)	1530 (2.9)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7 BH-12-49 Unassigned 2.0 - 2.5 11/30/2012	AOI7 BH-12-53 Unassigned 2.0 - 2.5 11/30/2012	AOI7 BH-12-54 Tank Group 06 2.5 - 3.0 11/30/2012	AOI7 BH-12-55 Tank Group 06 1.0 - 1.5 11/30/2012	AOI7 BH-12-55 Tank Group 06 2.0 - 2.5 11/30/2012	AOI7 BH-12-56 Unassigned 1.5 - 2.0 11/28/2012	AOI7 BH-12-58 Tank Group 06 2.5 - 3.0 11/28/2012	AOI7 BH-12-58 Tank Group 06 3.5 - 4.0 11/28/2012	AOI7 BH-12-62 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-64 Unassigned 2.0 - 2.5 11/29/2012	AOI7 BH-12-64 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-67 Unassigned 1.5 - 2.0 11/29/2012	AOI7 BH-12-67 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-68 Unassigned 1.0 - 1.5 11/29/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00083)	ND (0.066)	0.34 (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	0.135 (0.07)	ND (0.00099)	ND (0.0014)	ND (0.0013)	ND (0.00099)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0042)	ND (0.33)	2.24 (0.33)	ND (0.0042)	ND (0.0053)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.0043)	ND (0.35)	ND (0.0049)	ND (0.007)	ND (0.0064)	ND (0.005)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00083)	ND (0.066)	ND (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	ND (0.07)	ND (0.00099)	ND (0.0014)	ND (0.0013)	ND (0.00099)
1,2-Dichloroethane	85	0.5	ND (0.00083)	ND (0.066)	ND (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	ND (0.07)	ND (0.00099)	ND (0.0014)	ND (0.0013)	ND (0.00099)
Ethyl Benzene	880	70	ND (0.00083)	0.164 (0.066)	5.98 (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	0.143 (0.07)	ND (0.00099)	ND (0.0014)	ND (0.0013)	ND (0.00099)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.00083)	ND (0.066)	ND (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	ND (0.07)	ND (0.00099)	0.0023 (0.0014)	ND (0.0013)	ND (0.00099)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.00083)	0.148 (0.066)	0.569 (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	0.21 J (0.36)	ND (0.00087)	0.421 (0.07)	ND (0.00099)	ND (0.0014)	ND (0.0013)	ND (0.00099)
1,2,4-Trimethylbenzene	4700	300	ND (0.0042)	1.86 (0.33)	34.9 (3.3)	ND (0.0042)	ND (0.0053)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.0043)	ND (0.35)	ND (0.0049)	ND (0.007)	ND (0.0064)	ND (0.005)
1,3,5-Trimethylbenzene	4700	93	ND (0.0042)	0.474 (0.33)	9.72 (0.33)	ND (0.0042)	ND (0.0053)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.0043)	ND (0.35)	ND (0.0049)	ND (0.007)	ND (0.0064)	ND (0.005)
Xylenes (total)	7900	1000	ND (0.00083)	0.942 (0.066)	17.2 (0.066)	ND (0.00085)	ND (0.0011)	ND (0.005)	ND (0.005)	ND (0.36)	ND (0.00087)	0.3 (0.07)	ND (0.00099)	0.0025 (0.0014)	0.0024 (0.0013)	ND (0.00099)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.0698 (0.036)	0.409 (0.08)	0.932 (0.038)	0.037 (0.037)	0.265 (0.073)	0.35 (0.02)	0.13 (0.02)	3.3 (0.12)	0.0828 (0.029)	1.88 (0.072)	0.382 (0.034)	0.497 (0.071)	0.791 (0.039)	0.089 (0.033)
Benzo(a)anthracene	130	340	0.26 (0.036)	0.914 (0.08)	1.35 (0.038)	0.118 (0.037)	0.612 (0.073)	0.85 (0.02)	0.27 (0.02)	5.2 (0.12)	0.276 (0.029)	2.13 (0.072)	0.969 (0.034)	0.908 (0.071)	1.52 (0.039)	0.214 (0.033)
Benzo(a)pyrene	91	46	0.278 (0.036)	0.921 (0.08)	1.04 (0.038)	0.12 (0.037)	0.599 (0.073)	1 (0.02)	0.3 (0.02)	5.3 (0.12)	0.329 (0.029)	2.26 (0.072)	0.916 (0.034)	1.06 (0.071)	1.57 (0.039)	0.203 (0.033)
Benzo(b)fluoranthene	76	170	0.263 (0.036)	0.895 (0.08)	1.32 (0.038)	0.125 (0.037)	0.701 (0.073)	1.3 (0.02)	0.35 (0.02)	6.2 (0.12)	0.415 (0.029)	1.95 (0.072)	0.771 (0.034)	0.943 (0.071)	1.55 (0.039)	0.185 (0.033)
Benzo(g,h,i)perylene	190000	180	0.226 (0.036)	0.839 (0.08)	0.709 (0.038)	0.116 (0.037)	0.557 (0.073)	0.88 (0.02)	0.28 (0.02)	3.7 (0.12)	0.281 (0.029)	1.52 (0.072)	0.678 (0.034)	0.641 (0.071)	1.01 (0.039)	0.279 (0.033)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.305 (0.036)	1.31 (0.08)	1.43 (0.038)	0.124 (0.037)	0.718 (0.073)	0.89 (0.02)	0.27 (0.02)	6.3 (0.12)	0.325 (0.029)	2.89 (0.072)	0.987 (0.034)	1.61 (0.071)	1.65 (0.039)	0.201 (0.033)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.036)	0.297 (0.08)	0.89 (0.038)	ND (0.037)	0.1 (0.073)	0.076 (0.02)	0.04 (0.02)	2.4 (0.12)	0.0428 (0.029)	1.73 (0.072)	0.141 (0.034)	0.51 (0.071)	0.426 (0.039)	ND (0.033)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0042)	0.989 (0.33)	4.58 (0.33)	ND (0.0042)	ND (0.0053)	1 (0.02)	0.52 (0.02)	12 (0.12)	ND (0.0043)	0.816 (0.35)	ND (0.0049)	ND (0.007)	ND (0.0064)	ND (0.005)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.201 (0.036)	1.25 (0.08)	2.73 (0.038)	0.0855 (0.037)	0.792 (0.073)	0.64 (0.02)	0.34 (0.02)	4.1 (0.12)	0.527 (0.029)	4.08 (0.072)	0.932 (0.034)	1.02 (0.071)	1.66 (0.039)	0.197 (0.033)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.41 (0.036)	1.81 (0.08)	3.35 (0.038)	0.185 (0.037)	0.928 (0.073)	0.93 (0.02)	0.34 (0.02)	10 (0.12)	0.664 (0.029)	4.06 (0.072)	1.69 (0.034)	1.99 (0.071)	2.31 (0.039)	0.339 (0.033)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7 BH-12-49 Unassigned 2.0 - 2.5 11/30/2012	AOI7 BH-12-53 Unassigned 2.0 - 2.5 11/30/2012	AOI7 BH-12-54 Tank Group 06 2.5 - 3.0 11/30/2012	AOI7 BH-12-55 Tank Group 06 1.0 - 1.5 11/30/2012	AOI7 BH-12-55 Tank Group 06 2.0 - 2.5 11/30/2012	AOI7 BH-12-56 Unassigned 1.5 - 2.0 11/28/2012	AOI7 BH-12-58 Tank Group 06 2.5 - 3.0 11/28/2012	AOI7 BH-12-58 Tank Group 06 3.5 - 4.0 11/28/2012	AOI7 BH-12-62 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-64 Unassigned 2.0 - 2.5 11/29/2012	AOI7 BH-12-64 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-67 Unassigned 1.5 - 2.0 11/29/2012	AOI7 BH-12-67 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-68 Unassigned 1.0 - 1.5 11/29/2012
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	107 (4.3)	510 (2.3)	190 (4.9)	112 (2.2)	313 (2.5)	743 (2.36)	350 (1.12)	467 (1.32)	26.1 (2)	594 (2.5)	360 (2.5)	583 (2.4)	672 (2.6)	240 (2.2)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7 BH-12-68 Unassigned 2.5 - 3.0 11/29/2012	AOI7 BH-12-69 Unassigned 1.5 - 2.0 11/29/2012	AOI7 BH-12-69 Unassigned 2.0 - 2.5 11/29/2012	AOI7 BH-12-70 Unassigned 1.5 - 2.0 11/28/2012	AOI7 BH-12-70 Unassigned 3.5 - 4.0 11/28/2012	AOI7 BH-12-72 Unassigned 3.0 - 3.5 11/28/2012	AOI7 BH-12-73 Unassigned 4.5 - 5.0 11/28/2012	AOI7 BH-12-74 Unassigned 0.5 - 1.0 11/28/2012	AOI7 BH-12-74 Unassigned 3.5 - 4.0 11/28/2012	AOI7 BH-12-75 Unassigned 0.5 - 1.0 11/28/2012	AOI7 BH-12-75 Unassigned 1.5 - 2.0 11/28/2012	AOI7 BH-12-76 Unassigned 0.5 - 1.0 11/28/2012	AOI7 BH-12-76 Unassigned 2.5 - 3.0 11/28/2012	AOI7 BH-12-77 Tank Group 06 2.5 - 3.0 11/28/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.00097 (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	0.027 (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0045)	ND (0.004)	ND (0.0039)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
1,2-Dichloroethane	85	0.5	ND (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Ethyl Benzene	880	70	ND (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.00089)	ND (0.00079)	ND (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
1,2,4-Trimethylbenzene	4700	300	ND (0.0045)	ND (0.004)	ND (0.0039)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
1,3,5-Trimethylbenzene	4700	93	ND (0.0045)	ND (0.004)	ND (0.0039)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Xylenes (total)	7900	1000	ND (0.00089)	ND (0.00079)	0.002 (0.00079)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.009)	ND (0.004)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.158 (0.064)	5.04 (0.61)	1.54 (0.031)	ND (0.018)	ND (0.019)	0.31 (0.019)	0.12 (0.024)	0.081 (0.02)	0.85 (0.02)	0.079 (0.019)	0.88 (0.2)	0.035 (0.019)	1.5 (0.026)	ND (0.018)
Benzo(a)anthracene	130	340	0.39 (0.064)	6.21 (0.61)	2.77 (0.031)	0.032 (0.018)	ND (0.019)	0.76 (0.019)	0.24 (0.024)	0.27 (0.02)	1.9 (0.02)	0.29 (0.019)	2.6 (0.2)	0.11 (0.019)	0.87 (0.026)	0.026 (0.018)
Benzo(a)pyrene	91	46	0.392 (0.064)	4.06 (0.61)	2.38 (0.031)	0.039 (0.018)	ND (0.019)	0.93 (0.019)	0.22 (0.024)	0.36 (0.02)	1.6 (0.02)	0.32 (0.019)	2.8 (0.2)	0.099 (0.019)	0.66 (0.026)	0.028 (0.018)
Benzo(b)fluoranthene	76	170	0.337 (0.064)	3.28 (0.61)	2.64 (0.031)	0.057 (0.018)	ND (0.019)	1.1 (0.019)	0.32 (0.024)	0.47 (0.02)	1.9 (0.02)	0.44 (0.019)	3.5 (0.2)	0.13 (0.019)	1.1 (0.026)	0.032 (0.018)
Benzo(g,h,i)perylene	190000	180	0.305 (0.064)	1.69 (0.61)	1.71 (0.031)	0.039 (0.018)	ND (0.019)	0.7 (0.019)	0.21 (0.024)	0.41 (0.02)	1.1 (0.02)	0.29 (0.019)	1.9 (0.2)	0.059 (0.019)	0.56 (0.026)	0.02 (0.018)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.449 (0.064)	5.53 (0.61)	2.67 (0.031)	0.032 (0.018)	ND (0.019)	0.9 (0.019)	0.25 (0.024)	0.45 (0.02)	2.2 (0.02)	0.39 (0.019)	2.9 (0.2)	0.14 (0.019)	1.1 (0.026)	0.032 (0.018)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.064)	1.74 (0.03)	0.459 (0.031)	ND (0.018)	ND (0.019)	0.09 (0.019)	0.045 (0.024)	ND (0.02)	0.18 (0.02)	ND (0.019)	0.33 (0.2)	ND (0.019)	0.78 (0.026)	ND (0.018)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0045)	ND (0.004)	ND (0.0039)	0.025 (0.018)	ND (0.019)	1 (0.019)	0.11 (0.024)	0.13 (0.02)	0.19 (0.02)	0.19 (0.019)	0.43 (0.2)	0.027 (0.019)	18 (0.13)	ND (0.018)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.433 (0.064)	17.9 (0.61)	5.63 (0.15)	0.026 (0.018)	ND (0.019)	0.88 (0.019)	0.26 (0.024)	0.41 (0.02)	3.7 (0.02)	0.32 (0.019)	2.7 (0.2)	0.16 (0.019)	5.2 (0.026)	ND (0.018)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.565 (0.064)	14.4 (0.61)	5.68 (0.15)	0.039 (0.018)	ND (0.019)	1 (0.019)	0.36 (0.024)	0.46 (0.02)	4.5 (0.02)	0.43 (0.019)	4.3 (0.2)	0.18 (0.019)	1.8 (0.026)	0.035 (0.018)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7 BH-12-68	AOI7 BH-12-69	AOI7 BH-12-69	AOI7 BH-12-70	AOI7 BH-12-70	AOI7 BH-12-72	AOI7 BH-12-73	AOI7 BH-12-74	AOI7 BH-12-74	AOI7 BH-12-75	AOI7 BH-12-75	AOI7 BH-12-76	AOI7 BH-12-76	AOI7 BH-12-77
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06
Collection Depth (ft bgs)			2.5 - 3.0	1.5 - 2.0	2.0 - 2.5	1.5 - 2.0	3.5 - 4.0	3.0 - 3.5	4.5 - 5.0	0.5 - 1.0	3.5 - 4.0	0.5 - 1.0	1.5 - 2.0	0.5 - 1.0	2.5 - 3.0	2.5 - 3.0
Sample Date			11/29/2012	11/29/2012	11/29/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012
Comments																
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	210 (2.4)	14.7 (2.2)	43.5 (2.2)	13.8 (0.212)	7.46 (0.21)	185 (1.1)	27.3 (0.275)	254 (1.16)	538 (2.26)	335 (1.12)	551 (2.27)	143 (0.542)	380 (1.49)	4.4 (0.207)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7 BH-12-78 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-78 Unassigned 1.5 - 2.0 11/27/2012	AOI7 BH-12-79 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-80 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-82 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-83 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-83 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-84 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-85 Unassigned 1.0 - 1.5 11/27/2012	AOI7 BH-12-85 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-87 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-87 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-88 Unassigned 2.0 - 2.5 11/27/2012	AOI7 BH-12-91 Unassigned 0.0 - 0.5 11/27/2012
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	ND (0.00086)	ND (0.0016)	2.35 (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0054)	ND (0.0049)	ND (0.0056)	ND (0.0085)	ND (0.0043)	ND (0.0078)	ND (0.49)	ND (0.0062)	ND (0.0095)	ND (0.0051)	ND (0.0044)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	ND (0.00086)	ND (0.0016)	ND (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
1,2-Dichloroethane	85	0.5	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	ND (0.00086)	ND (0.0016)	ND (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
Ethyl Benzene	880	70	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	ND (0.00086)	ND (0.0016)	0.382 (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	ND (0.00086)	ND (0.0016)	ND (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	0.0011 (0.00086)	ND (0.0016)	1.16 (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
1,2,4-Trimethylbenzene	4700	300	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0054)	ND (0.0049)	ND (0.0056)	ND (0.0085)	ND (0.0043)	ND (0.0078)	1.03 (0.49)	ND (0.0062)	ND (0.0095)	ND (0.0051)	ND (0.0044)
1,3,5-Trimethylbenzene	4700	93	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0054)	ND (0.0049)	ND (0.0056)	ND (0.0085)	ND (0.0043)	ND (0.0078)	ND (0.49)	ND (0.0062)	ND (0.0095)	ND (0.0051)	ND (0.0044)
Xylenes (total)	7900	1000	ND (0.00088)	ND (0.001)	ND (0.0011)	ND (0.0011)	ND (0.00097)	ND (0.0011)	ND (0.0017)	0.0012 (0.00086)	ND (0.0016)	1.64 (0.099)	ND (0.0012)	ND (0.0019)	ND (0.001)	ND (0.00088)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.119 (0.033)	0.0605 (0.039)	0.0638 (0.037)	0.0448 (0.03)	ND (0.036)	ND (0.031)	0.362 (0.047)	ND (0.033)	0.0562 (0.043)	0.256 (0.045)	0.223 (0.041)	0.204 (0.047)	ND (0.037)	0.0677 (0.038)
Benzo(a)anthracene	130	340	0.2 (0.033)	0.18 (0.039)	0.265 (0.037)	0.152 (0.03)	0.0384 (0.036)	ND (0.031)	0.845 (0.047)	0.0454 (0.033)	0.128 (0.043)	0.455 (0.045)	0.67 (0.041)	0.662 (0.047)	0.0591 (0.037)	0.401 (0.038)
Benzo(a)pyrene	91	46	0.15 (0.033)	0.207 (0.039)	0.244 (0.037)	0.161 (0.03)	ND (0.036)	ND (0.031)	0.87 (0.047)	0.043 (0.033)	0.183 (0.043)	0.524 (0.045)	0.775 (0.041)	0.695 (0.047)	0.0748 (0.037)	0.403 (0.038)
Benzo(b)fluoranthene	76	170	0.176 (0.033)	0.235 (0.039)	0.282 (0.037)	0.158 (0.03)	ND (0.036)	ND (0.031)	0.973 (0.047)	0.0646 (0.033)	0.259 (0.043)	0.46 (0.045)	0.815 (0.041)	0.593 (0.047)	0.129 (0.037)	0.76 (0.038)
Benzo(g,h,i)perylene	190000	180	0.0889 (0.033)	0.222 (0.039)	0.179 (0.037)	0.106 (0.03)	0.106 (0.036)	ND (0.031)	0.693 (0.047)	0.0338 (0.033)	0.197 (0.043)	0.494 (0.045)	0.617 (0.041)	0.56 (0.047)	0.0754 (0.037)	0.463 (0.038)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.205 (0.033)	0.202 (0.039)	0.253 (0.037)	0.151 (0.03)	0.0408 (0.036)	ND (0.031)	0.887 (0.047)	0.0657 (0.033)	0.159 (0.043)	0.518 (0.045)	0.718 (0.041)	0.687 (0.047)	0.0824 (0.037)	0.622 (0.038)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.0695 (0.033)	ND (0.039)	ND (0.037)	ND (0.03)	ND (0.036)	ND (0.031)	0.122 (0.047)	ND (0.033)	ND (0.043)	0.139 (0.045)	0.0663 (0.041)	0.0573 (0.047)	ND (0.037)	ND (0.038)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0044)	ND (0.0052)	ND (0.0055)	ND (0.0054)	ND (0.0049)	ND (0.0056)	ND (0.0085)	ND (0.0043)	ND (0.0078)	1.04 (0.49)	ND (0.0062)	ND (0.0095)	ND (0.0051)	ND (0.0044)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.584 (0.033)	0.115 (0.039)	0.243 (0.037)	0.217 (0.03)	ND (0.036)	ND (0.031)	1.01 (0.047)	0.0508 (0.033)	0.0803 (0.043)	0.613 (0.045)	0.737 (0.041)	0.611 (0.047)	ND (0.037)	0.122 (0.038)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.35 (0.033)	0.212 (0.039)	0.39 (0.037)	0.276 (0.03)	0.0396 (0.036)	ND (0.031)	1.03 (0.047)	0.0768 (0.033)	0.111 (0.043)	0.54 (0.045)	0.884 (0.041)	0.896 (0.047)	0.0767 (0.037)	0.91 (0.038)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location		Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7 BH-12-78 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-78 Unassigned 1.5 - 2.0 11/27/2012	AOI7 BH-12-79 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-80 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-82 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-83 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-83 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-84 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-85 Unassigned 1.0 - 1.5 11/27/2012	AOI7 BH-12-85 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-87 Unassigned 0.5 - 1.0 11/27/2012	AOI7 BH-12-87 Unassigned 2.5 - 3.0 11/27/2012	AOI7 BH-12-88 Unassigned 2.0 - 2.5 11/27/2012	AOI7 BH-12-91 Unassigned 0.0 - 0.5 11/27/2012
Collection Depth (ft bgs)																	
Sample Date																	
Comments																	
Other				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																	
	Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1000	450	237 (2.2)	128 (2.4)	498 (2.3)	104 (2.3)	116 (13)	16.2 (2.2)	264 (3.2)	58 (2.3)	145 (2.8)	344 (2.8)	870 (2.8)	1110 (2.9)	198 (2.4)	291 (24)
	Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7 BH-12-92	AOI7 BH-12-94	AOI7 BH-12-98	AOI7 BH-12-99	AOI7_B001	AOI7_B002	AOI7_B002	AOI7_B003	AOI7_B004	AOI7_B005	AOI7_B006	AOI7_B007	AOI7_B008	AOI7_B009
Area			Unassigned	Unassigned	Tank Group 06	Tank Group 06	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 0.5	0.5 - 1.0	0.5 - 1.0	0.0 - 0.5	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Sample Date			11/27/2012	11/27/2012	11/28/2012	11/28/2012	6/24/2022	6/28/2022	6/28/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022
Comments									Field Duplicate							
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.00083)	ND (0.0012)	0.53 (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.0041)	ND (0.0058)	7.6 (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00083)	ND (0.0012)	ND (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.00083)	ND (0.0012)	ND (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.00083)	ND (0.0012)	0.18 J (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.00083)	ND (0.0012)	ND (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.00083)	ND (0.0012)	2 (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	ND (0.0041)	ND (0.0058)	7.3 (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.0041)	ND (0.0058)	ND (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	ND (0.00083)	ND (0.0012)	0.57 (0.38)	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.034)	0.162 (0.036)	0.17 J (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	ND (0.034)	0.816 (0.036)	0.34 (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (0.034)	0.782 (0.036)	0.32 (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	ND (0.034)	0.952 (0.036)	0.59 (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	ND (0.034)	0.538 (0.036)	0.32 (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	ND (0.034)	0.904 (0.036)	0.42 (0.22)	16 (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.034)	ND (0.036)	0.077 J (0.22)	400 (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.0041)	ND (0.0058)	0.79 (0.22)	ND (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	ND (0.034)	1.03 (0.036)	0.7 (0.22)	180 (15)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	ND (0.034)	1.54 (0.036)	0.53 (0.22)	ND (15)	ND (0.00051)	ND (0.006)	ND (0.0058)	ND (0.00057)	ND (0.00052)	ND (0.00055)	ND (0.00056)	ND (0.0006)	ND (0.00055)	ND (0.00058)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	ND (0.00051)	ND (0.006)	ND (0.0058)	ND (0.00057)	ND (0.00052)	ND (0.00055)	ND (0.00056)	ND (0.0006)	ND (0.00055)	0.00062 (0.00058)
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	ND (0.00051)	ND (0.006)	ND (0.0058)	ND (0.00057)	ND (0.00052)	ND (0.00055)	ND (0.00056)	ND (0.0006)	ND (0.00055)	0.00034 (0.00058)
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	ND (0.00051)	ND (0.006)	ND (0.0058)	ND (0.00057)	ND (0.00052)	ND (0.00055)	ND (0.00056)	ND (0.0006)	ND (0.00055)	ND (0.00058)
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7 BH-12-92	AOI7 BH-12-94	AOI7 BH-12-98	AOI7 BH-12-99	AOI7_B001	AOI7_B002	AOI7_B002	AOI7_B003	AOI7_B004	AOI7_B005	AOI7_B006	AOI7_B007	AOI7_B008	AOI7_B009
Area			Unassigned	Unassigned	Tank Group 06	Tank Group 06	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 0.5	0.5 - 1.0	0.5 - 1.0	0.0 - 0.5	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Sample Date			11/27/2012	11/27/2012	11/28/2012	11/28/2012	6/24/2022	6/28/2022	6/28/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022	6/24/2022
Comments									Field Duplicate							
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	30.2 (2.1)	1340 (2.6)	955 (2.5)	341 (1.43)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-01-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-02-2019 Unassigned 2.0 - 2.5 3/26/2019	AOI7-BH-03-2019 Unassigned 2.5 - 3.0 3/22/2019	AOI7-BH-04-2019 Unassigned 2.5 - 3.0 3/22/2019	AOI7-BH-05-2019 Unassigned 1.5 - 2.0 3/22/2019	AOI7-BH-06-2019 Unassigned 0.5 - 1.0 3/26/2019	AOI7-BH-07-2019 Unassigned 1.5 - 2.0 3/26/2019	AOI7-BH-08-2019 Naphtha Release Area 0.3 - 0.5 3/26/2019	AOI7-BH-08-2019 Naphtha Release Area 2.0 - 2.5 10/28/2024	AOI7-BH-09-2019 Unassigned 0.3 - 0.5 3/26/2019	AOI7-BH-10-2019 Unassigned 2.0 - 2.5 3/26/2019	AOI7-BH-11-2019 Unassigned 1.5 - 2.0 3/26/2019	AOI7-BH-12-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-13-2019 Unassigned 1.5 - 2.0 3/26/2019
Volatile Organic Compounds																
Acetonitrile	4700	53	0.003 J (0.008)	0.05 J (0.29)	ND (0.006)	0.44 (0.27)	0.46 (0.28)	0.001 J (0.007)	ND (0.004)	40 (4.4)	26 (0.098)	0.002 J (0.005)	ND (0.26)	ND (0.25)	0.068 J (0.22)	1.2 (0.42)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.008)	0.62 (0.29)	ND (0.006)	0.062 J (0.27)	1.2 (0.28)	ND (0.007)	ND (0.004)	41 (4.4)	NA	ND (0.005)	ND (0.26)	ND (0.25)	ND (0.22)	0.043 J (0.42)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	ND (0.008)	0.055 J (0.29)	ND (0.006)	0.058 J (0.27)	0.12 J (0.28)	ND (0.007)	ND (0.004)	20 (0.44)	NA	ND (0.005)	0.029 J (0.26)	ND (0.25)	ND (0.22)	0.13 J (0.42)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.008)	ND (0.29)	0.001 J (0.006)	ND (0.27)	ND (0.28)	ND (0.007)	ND (0.004)	ND (0.44)	NA	ND (0.005)	ND (0.26)	ND (0.25)	ND (0.22)	ND (0.42)
Ethyl Benzene	880	70	0.002 J (0.008)	0.054 J (0.29)	ND (0.006)	0.3 (0.27)	0.25 J (0.28)	0.001 J (0.007)	0.0003 J (0.004)	130 (4.4)	0.56 (0.2)	0.001 J (0.005)	0.2 J (0.26)	0.031 J (0.25)	0.024 J (0.22)	1 (0.42)
Hexane	10000	5300	0.001 J (0.008)	0.11 J (0.29)	ND (0.006)	0.042 J (0.27)	0.17 J (0.28)	ND (0.007)	ND (0.004)	26 (0.44)	NA	ND (0.005)	ND (0.26)	ND (0.25)	0.035 J (0.22)	0.18 J (0.42)
Methyl tert-butyl ether	8500	2	ND (0.008)	0.046 J (0.29)	ND (0.006)	ND (0.27)	0.048 J (0.28)	ND (0.007)	ND (0.004)	9.8 (0.44)	NA	ND (0.005)	0.033 J (0.26)	ND (0.25)	ND (0.22)	0.091 J (0.42)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.008)	0.23 J (0.29)	ND (0.006)	0.17 J (0.27)	0.76 (0.28)	ND (0.007)	ND (0.004)	140 (4.4)	NA	ND (0.005)	0.048 J (0.26)	ND (0.25)	ND (0.22)	0.78 (0.42)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	0.001 J (0.008)	1.9 (0.29)	0.0009 J (0.006)	0.16 J (0.27)	ND (0.28)	ND (0.007)	ND (0.004)	2 (0.44)	NA	ND (0.005)	0.23 J (0.26)	0.078 J (0.25)	0.16 J (0.22)	0.1 J (0.42)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7-BH-01-2019	AOI7-BH-02-2019	AOI7-BH-03-2019	AOI7-BH-04-2019	AOI7-BH-05-2019	AOI7-BH-06-2019	AOI7-BH-07-2019	AOI7-BH-08-2019	AOI7-BH-08-2019	AOI7-BH-09-2019	AOI7-BH-10-2019	AOI7-BH-11-2019	AOI7-BH-12-2019	AOI7-BH-13-2019
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Naphtha Release Area	Naphtha Release Area	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			1.0 - 1.5	2.0 - 2.5	2.5 - 3.0	2.5 - 3.0	1.5 - 2.0	0.5 - 1.0	1.5 - 2.0	0.3 - 0.5	2.0 - 2.5	0.3 - 0.5	2.0 - 2.5	1.5 - 2.0	1.0 - 1.5	1.5 - 2.0
Sample Date			3/26/2019	3/26/2019	3/22/2019	3/22/2019	3/22/2019	3/26/2019	3/26/2019	3/26/2019	10/28/2024	3/26/2019	3/26/2019	3/26/2019	3/26/2019	3/26/2019
Comments																
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
	Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-13-45	AOI7-BH-13-45	AOI7-BH-13-46	AOI7-BH-13-47	AOI7-BH-13-47	AOI7-BH-13-48	AOI7-BH-13-48	AOI7-BH-13-50	AOI7-BH-14-2019	AOI7-BH-15-2019	AOI7-BH-16-001	AOI7-BH-16-001	AOI7-BH-16-001	AOI7-BH-16-002
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)			1.5 - 2.0	2.0 - 2.5	1.5 - 2.0	1.5 - 2.0	2.5 - 3.0	1.5 - 2.0	2.5 - 3.0	0.0 - 0.5	1.0 - 1.5	1.0 - 1.5	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0
Sample Date			3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/19/2013	3/26/2019	3/26/2019	7/1/2016	7/1/2016	7/1/2016	7/12/2016
Comments															Field Duplicate	
Volatile Organic Compounds																
Acetonitrile	4700	53	ND (0.14)	ND (0.13)	ND (0.00086)	ND (0.12)	ND (0.16)	2.66 (0.088)	0.845 (0.11)	ND (0.0039)	0.19 J (0.27)	8.3 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.69)	ND (0.64)	ND (0.0043)	ND (0.58)	0.87 (0.79)	ND (0.44)	1.96 (0.56)	ND (0.019)	0.068 (0.007)	0.47 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.14)	ND (0.13)	ND (0.00086)	ND (0.12)	ND (0.16)	ND (0.088)	ND (0.11)	ND (0.0039)	NA	NA	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.14)	ND (0.13)	ND (0.00086)	ND (0.12)	ND (0.16)	ND (0.088)	ND (0.11)	ND (0.0039)	NA	NA	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Cyclohexane	10000	6900	ND (0.14)	ND (0.13)	ND (0.00086)	ND (0.12)	ND (0.16)	0.643 (0.088)	0.401 (0.11)	ND (0.0039)	0.26 (0.007)	2.1 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.14)	ND (0.13)	ND (0.00086)	ND (0.12)	ND (0.16)	ND (0.088)	ND (0.11)	ND (0.0039)	ND (0.007)	ND (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Ethyl Benzene	880	70	0.14 (0.14)	ND (0.13)	ND (0.00086)	0.252 (0.12)	0.475 (0.16)	3.45 (0.088)	1.08 (0.11)	ND (0.0039)	0.2 J (0.27)	12 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Hexane	10000	5300	ND (0.69)	ND (0.64)	ND (0.0043)	ND (0.58)	ND (0.79)	0.499 (0.44)	ND (0.56)	ND (0.019)	0.31 (0.007)	3.3 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Methyl tert-butyl ether	8500	2	ND (0.69)	ND (0.64)	ND (0.0043)	ND (0.58)	ND (0.79)	ND (0.44)	ND (0.56)	ND (0.019)	0.13 (0.007)	1.2 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.474 (0.14)	0.394 (0.13)	ND (0.00086)	0.255 (0.12)	0.364 (0.16)	4.53 (0.088)	1.58 (0.11)	ND (0.0039)	0.15 J (0.27)	13 (0.23)	ND (0.004)	ND (0.005)	ND (0.006)	ND (0.005)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.21)	0.256 (0.21)	0.0831 (0.037)	0.459 (0.042)	2.03 (0.24)	0.332 (0.034)	1.12 (0.077)	0.11 (0.038)	NA	NA	0.005 J (0.018)	ND (0.022)	ND (0.022)	0.02 (0.019)
Xylenes (total)	7900	1000	0.482 (0.21)	0.55 (0.21)	0.335 (0.037)	1.23 (0.042)	3.13 (0.24)	0.797 (0.034)	1.56 (0.077)	0.188 (0.038)	NA	NA	0.017 J (0.018)	0.007 J (0.022)	0.006 J (0.022)	0.088 (0.019)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	0.395 (0.21)	0.6 (0.21)	0.347 (0.037)	1.25 (0.042)	2.5 (0.24)	0.934 (0.034)	1.5 (0.077)	0.197 (0.038)	NA	NA	0.017 J (0.018)	0.009 J (0.022)	0.007 J (0.022)	0.062 (0.019)
Anthracene	190000	350	0.425 (0.21)	0.643 (0.21)	0.535 (0.037)	1.14 (0.042)	2.4 (0.24)	1.1 (0.034)	1.44 (0.077)	0.184 (0.038)	NA	NA	0.026 (0.018)	0.011 J (0.022)	0.007 J (0.022)	0.085 (0.019)
Benzo(a)anthracene	130	340	0.485 (0.21)	0.601 (0.21)	0.309 (0.037)	0.818 (0.042)	1.37 (0.24)	0.59 (0.034)	0.986 (0.077)	0.516 (0.038)	NA	NA	0.019 (0.018)	0.01 J (0.022)	ND (0.022)	0.051 (0.019)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	1.26 (0.21)	1.29 (0.21)	0.546 (0.037)	1.4 (0.042)	4.13 (0.24)	1 (0.034)	2.07 (0.077)	0.219 (0.038)	NA	NA	0.018 J (0.018)	0.008 J (0.022)	0.005 J (0.022)	0.2 (0.019)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (0.21)	ND (0.21)	ND (0.037)	0.211 (0.042)	3.36 (0.24)	0.428 (0.034)	1.58 (0.077)	0.0427 (0.038)	NA	NA	ND (0.018)	ND (0.022)	ND (0.022)	0.015 J (0.019)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	ND (0.21)	ND (0.21)	ND (0.037)	0.19 (0.042)	ND (0.24)	0.12 (0.034)	ND (0.077)	0.088 (0.038)	0.007 J (0.007)	0.16 J (0.23)	0.009 J (0.018)	ND (0.022)	ND (0.022)	0.019 J (0.019)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	0.246 (0.21)	0.217 (0.21)	0.266 (0.037)	1.07 (0.042)	7.92 (0.24)	0.214 (0.034)	2.27 (0.077)	0.269 (0.038)	NA	NA	0.015 J (0.018)	0.006 J (0.022)	ND (0.022)	0.15 (0.019)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	1.39 (0.21)	1.95 (0.21)	0.585 (0.037)	1.46 (0.042)	5.58 (0.24)	1.51 (0.034)	3.34 (0.077)	0.243 (0.038)	NA	NA	0.025 (0.018)	0.012 J (0.022)	0.007 J (0.022)	0.11 (0.019)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	498 (2)	753 (2)	237 (2.2)	866 (2)	567 (2)	275 (2.2)	348 (2.5)	281 (2)	NA	NA	10.2 (1.12)	2.19 (1.42)	2.23 (1.34)	98.3 (6.34)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7-BH-13-45	AOI7-BH-13-45	AOI7-BH-13-46	AOI7-BH-13-47	AOI7-BH-13-47	AOI7-BH-13-48	AOI7-BH-13-48	AOI7-BH-13-50	AOI7-BH-14-2019	AOI7-BH-15-2019	AOI7-BH-16-001	AOI7-BH-16-001	AOI7-BH-16-001	AOI7-BH-16-002
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	1.5 - 2.0	2.0 - 2.5	1.5 - 2.0	1.5 - 2.0	2.5 - 3.0	1.5 - 2.0	2.5 - 3.0	0.0 - 0.5	1.0 - 1.5	1.0 - 1.5	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0
Sample Date			3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/13/2013	3/19/2013	3/26/2019	3/26/2019	7/1/2016	7/1/2016	7/1/2016	7/12/2016
Comments															Field Duplicate	
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-003 Tank Group 06 0.0 - 2.0 7/12/2016	AOI7-BH-16-005 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-006 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-007 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-008 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-009 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-010 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-011 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-011 Tank Group 06 2.0 - 4.0 6/28/2016	AOI7-BH-16-012 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-013 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-013 Tank Group 06 2.0 - 4.0 6/29/2016	AOI7-BH-16-014 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-015 Tank Group 06 0.0 - 2.0 6/29/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	0.0008 J (0.005)	0.002 J (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	0.079 J (0.64)	ND (0.66)	0.081 J (0.66)	ND (0.007)	ND (0.008)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
Cyclohexane	10000	6900	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
Ethyl Benzene	880	70	ND (0.004)	ND (0.006)	ND (0.24)	ND (0.005)	0.002 J (0.005)	0.002 J (0.005)	0.001 J (0.007)	ND (0.006)	ND (0.006)	0.81 (0.64)	0.28 J (0.66)	0.28 J (0.66)	ND (0.007)	ND (0.008)
Hexane	10000	5300	ND (0.004)	ND (0.006)	0.62 (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
Methyl tert-butyl ether	8500	2	ND (0.004)	ND (0.006)	0.13 J (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	ND (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.004)	ND (0.006)	0.2 J (0.24)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.007)	ND (0.006)	ND (0.006)	0.22 J (0.64)	ND (0.66)	ND (0.66)	ND (0.007)	ND (0.008)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.018)	0.59 (0.023)	0.6 (0.095)	0.067 (0.021)	0.1 (0.02)	0.11 (0.021)	1.1 (0.049)	0.91 (0.048)	2 (0.049)	2.4 (0.061)	2.5 (0.061)	4.3 (0.15)	1.6 (0.26)	1.2 (0.053)
Xylenes (total)	7900	1000	ND (0.018)	0.77 (0.023)	0.83 (0.095)	0.078 (0.021)	0.13 (0.02)	0.24 (0.021)	2.7 (0.049)	0.96 (0.048)	1.8 (0.049)	2 (0.061)	2.2 (0.061)	3.5 (0.15)	1.3 (0.26)	1.4 (0.053)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	ND (0.018)	0.66 (0.023)	1 (0.095)	0.053 (0.021)	0.2 (0.02)	0.26 (0.021)	2.1 (0.049)	0.81 (0.048)	1.5 (0.049)	1.5 (0.061)	1.3 (0.061)	1.8 (0.15)	1.2 (0.26)	1.3 (0.053)
Anthracene	190000	350	ND (0.018)	0.79 (0.023)	1.3 (0.095)	0.094 (0.021)	0.17 (0.02)	0.52 (0.021)	2.7 (0.049)	1.2 (0.048)	1.7 (0.049)	1.8 (0.061)	1.8 (0.061)	2.3 (0.15)	1.9 (0.26)	1.8 (0.053)
Benzo(a)anthracene	130	340	0.008 J (0.018)	0.6 (0.023)	0.42 (0.095)	0.11 (0.021)	0.14 (0.02)	0.51 (0.021)	1.4 (0.049)	0.72 (0.048)	1.5 (0.049)	1.1 (0.061)	0.75 (0.061)	1 (0.15)	1.2 (0.26)	1.3 (0.053)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	ND (0.018)	0.89 (0.023)	4.7 (0.095)	0.086 (0.021)	0.45 (0.02)	0.4 (0.021)	2.9 (0.049)	1.2 (0.048)	2.2 (0.049)	2.4 (0.061)	2.8 (0.061)	4.2 (0.15)	1.7 (0.26)	1.8 (0.053)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (0.018)	0.22 (0.023)	3.1 (0.095)	0.023 (0.021)	0.043 (0.02)	0.035 (0.021)	0.54 (0.049)	0.43 (0.048)	1.4 (0.049)	2 (0.061)	2.2 (0.061)	3.9 (0.15)	0.88 (0.26)	0.47 (0.053)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	ND (0.018)	5.2 (0.023)	0.3 (0.095)	0.28 (0.021)	0.34 (0.02)	0.48 (0.021)	10 (0.049)	9.5 (0.048)	10 (0.049)	11 (0.061)	8 (0.061)	10 (0.15)	22 (0.26)	12 (0.053)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	0.005 J (0.018)	1.7 (0.023)	8.7 (0.095)	0.15 (0.021)	0.25 (0.02)	0.27 (0.021)	3.9 (0.049)	3 (0.048)	4 (0.049)	4.3 (0.061)	5.9 (0.061)	15 (0.15)	5 (0.26)	3.4 (0.053)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	0.006 J (0.018)	0.87 (0.023)	2.8 (0.095)	0.098 (0.021)	0.23 (0.02)	0.4 (0.021)	3.6 (0.049)	1.2 (0.048)	3 (0.049)	4.2 (0.061)	6.3 (0.061)	10 (0.15)	1.9 (0.26)	1.6 (0.053)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	ND (13.4)	130 (1.41)	63.6 (5.86)	241 (7.72)	85.4 (6.55)	526 (7)	399 (8.61)	321 (2.07)	439 (1.52)	295 (2.19)	418 (1.92)	425 (2)	566 (2.26)	386 (1.9)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-003 Tank Group 06 0.0 - 2.0 7/12/2016	AOI7-BH-16-005 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-006 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-007 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-008 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-009 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-010 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-011 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-011 Tank Group 06 2.0 - 4.0 6/28/2016	AOI7-BH-16-012 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-013 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-013 Tank Group 06 2.0 - 4.0 6/29/2016	AOI7-BH-16-014 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-015 Tank Group 06 0.0 - 2.0 6/29/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-015	AOI7-BH-16-016	AOI7-BH-16-017	AOI7-BH-16-017	AOI7-BH-16-018	AOI7-BH-16-019	AOI7-BH-16-020	AOI7-BH-16-020	AOI7-BH-16-020	AOI7-BH-16-021	AOI7-BH-16-021	AOI7-BH-16-021	AOI7-BH-16-022	AOI7-BH-16-022
Area			Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0
Sample Date			6/29/2016	6/28/2016	7/11/2016	7/11/2016	7/11/2016	7/6/2016	6/28/2016	7/1/2016	7/1/2016	6/30/2016	6/30/2016	6/30/2016	7/5/2016	7/5/2016
Comments														Field Duplicate		
Volatile Organic Compounds																
Acetonitrile	4700	53	ND (0.66)	ND (0.004)	NA	NA	NA	0.0006 J (0.004)	ND (0.009)	ND (0.004)	0.15 J (0.66)	ND (0.004)	ND (0.007)	0.079 J (0.47)	ND (0.005)	ND (0.006)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.66)	ND (0.004)	NA	NA	NA	0.002 J (0.004)	ND (0.009)	ND (0.004)	ND (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.66)	ND (0.004)	NA	NA	NA	ND (0.004)	ND (0.009)	ND (0.004)	ND (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.66)	ND (0.004)	NA	NA	NA	ND (0.004)	ND (0.009)	ND (0.004)	ND (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
Cyclohexane	10000	6900	ND (0.66)	ND (0.004)	NA	NA	NA	ND (0.004)	ND (0.009)	ND (0.004)	0.23 J (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.66)	ND (0.004)	NA	NA	NA	ND (0.004)	ND (0.009)	ND (0.004)	ND (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
Ethyl Benzene	880	70	0.43 J (0.66)	ND (0.004)	NA	NA	NA	0.0009 J (0.004)	ND (0.009)	ND (0.004)	1.7 (0.66)	ND (0.004)	ND (0.007)	1.1 (0.47)	ND (0.005)	0.002 J (0.006)
Hexane	10000	5300	ND (0.66)	ND (0.004)	NA	NA	NA	0.002 J (0.004)	ND (0.009)	ND (0.004)	0.18 J (0.66)	ND (0.004)	ND (0.007)	0.12 J (0.47)	ND (0.005)	ND (0.006)
Methyl tert-butyl ether	8500	2	ND (0.66)	ND (0.004)	NA	NA	NA	0.002 J (0.004)	ND (0.009)	ND (0.004)	ND (0.66)	ND (0.004)	ND (0.007)	ND (0.47)	ND (0.005)	ND (0.006)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.66)	ND (0.004)	NA	NA	NA	0.002 J (0.004)	ND (0.009)	ND (0.004)	0.41 J (0.66)	ND (0.004)	ND (0.007)	0.17 J (0.47)	ND (0.005)	ND (0.006)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	2.6 (0.061)	0.012 J (0.018)	NA	NA	NA	0.18 (0.1)	0.024 (0.021)	0.3 (0.1)	1.2 (0.26)	0.19 (0.021)	1.1 (0.28)	1.9 (0.25)	1.3 (0.11)	2.6 (0.12)
Xylenes (total)	7900	1000	2.3 (0.061)	0.025 (0.018)	NA	NA	NA	0.27 (0.1)	0.11 (0.021)	0.53 (0.1)	1.5 (0.26)	0.53 (0.021)	1.9 (0.28)	3 (0.25)	2.2 (0.11)	3.6 (0.12)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	1.8 (0.061)	0.021 (0.018)	3.2 (0.71)	2.8 (0.75)	1.2 (0.73)	0.22 (0.1)	0.085 (0.021)	0.48 (0.1)	1.8 (0.26)	0.48 (0.021)	1.9 (0.28)	2.7 (0.25)	2.1 (0.11)	3.2 (0.12)
Anthracene	190000	350	2.2 (0.061)	0.035 (0.018)	NA	NA	NA	0.26 (0.1)	0.13 (0.021)	0.63 (0.1)	2.1 (0.26)	0.61 (0.021)	2.3 (0.28)	3.2 (0.25)	3.1 (0.11)	4.4 (0.12)
Benzo(a)anthracene	130	340	1.3 (0.061)	0.023 (0.018)	NA	NA	NA	0.29 (0.1)	0.076 (0.021)	0.59 (0.1)	1.6 (0.26)	0.33 (0.021)	1.1 (0.28)	1.6 (0.25)	1.6 (0.11)	2.5 (0.12)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	2.9 (0.061)	0.032 (0.018)	NA	NA	NA	0.57 (0.1)	0.14 (0.021)	0.6 (0.1)	1.8 (0.26)	0.48 (0.021)	2.3 (0.28)	3.3 (0.25)	2.3 (0.11)	3.8 (0.12)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	1.9 (0.061)	0.006 J (0.018)	NA	NA	NA	0.25 (0.1)	0.008 J (0.021)	0.15 (0.1)	0.55 (0.26)	0.074 (0.021)	1.2 (0.28)	2.4 (0.25)	0.8 (0.11)	1.4 (0.12)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	10 (0.061)	0.017 J (0.018)	NA	NA	NA	0.68 (0.1)	0.025 (0.021)	1 (0.1)	15 (0.26)	0.15 (0.021)	5.5 (0.28)	9.3 (0.25)	5.5 (0.11)	12 (0.12)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	4.4 (0.061)	0.028 (0.018)	NA	NA	NA	0.83 (0.1)	0.078 (0.021)	0.9 (0.1)	3.3 (0.26)	0.74 (0.021)	2.4 (0.28)	3.9 (0.25)	3.5 (0.11)	7.5 (0.12)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	5.4 (0.061)	0.039 (0.018)	NA	NA	NA	0.45 (0.1)	0.18 (0.021)	0.84 (0.1)	1.9 (0.26)	0.95 (0.021)	4.1 (0.28)	6.6 (0.25)	3.5 (0.11)	5.6 (0.12)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	452 (1.8)	21.4 (6.74)	NA	NA	NA	117 (1.73)	13.9 (1.31)	351 (1.58)	281 (2.02)	77.5 (1.44)	154 (2.05)	111 (1.74)	119 (1.46)	224 (1.43)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-015 Tank Group 06 2.0 - 4.0 6/29/2016	AOI7-BH-16-016 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-017 Tank Group 06 0.0 - 2.0 7/11/2016	AOI7-BH-16-017 Tank Group 06 2.0 - 4.0 7/11/2016	AOI7-BH-16-018 Tank Group 06 2.0 - 4.0 7/11/2016	AOI7-BH-16-019 Tank Group 06 0.0 - 2.0 7/6/2016	AOI7-BH-16-020 Tank Group 06 0.0 - 2.0 6/28/2016	AOI7-BH-16-020 Tank Group 06 0.0 - 2.0 7/1/2016	AOI7-BH-16-020 Tank Group 06 2.0 - 4.0 7/1/2016	AOI7-BH-16-021 Unassigned 0.0 - 2.0 6/30/2016	AOI7-BH-16-021 Unassigned 2.0 - 4.0 6/30/2016	AOI7-BH-16-021 Unassigned 2.0 - 4.0 6/30/2016 Field Duplicate	AOI7-BH-16-022 Unassigned 0.0 - 2.0 7/5/2016	AOI7-BH-16-022 Unassigned 2.0 - 4.0 7/5/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location		Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-023	AOI7-BH-16-023	AOI7-BH-16-024	AOI7-BH-16-024	AOI7-BH-16-025	AOI7-BH-16-025	AOI7-BH-16-025	AOI7-BH-16-026	AOI7-BH-16-026	AOI7-BH-16-027	AOI7-BH-16-028	AOI7-BH-16-028	AOI7-BH-16-029	AOI7-BH-16-029
Area				Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)				0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	4.8 - 5.0	4.8 - 5.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0
Sample Date				7/1/2016	7/1/2016	7/7/2016	7/7/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/7/2016	7/11/2016	7/12/2016	7/8/2016	7/8/2016
Comments										Field Duplicate							Field Duplicate
Volatile Organic Compounds																	
Acetonitrile	4700	53	ND (0.005)	0.0009 J (0.008)	ND (0.004)	0.0007 J (0.004)	0.82 J (4.1)	1.4 J (4.9)	0.93 J (5.2)	0.001 J (0.006)	0.17 J (0.43)	ND (0.004)	0.014 (0.006)	0.01 (0.006)	6.6 (0.65)	7.4 (0.58)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	3.4 J (4.1)	12 (4.9)	12 (5.2)	0.004 J (0.006)	0.36 J (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	9.3 (0.65)	5.2 (0.58)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	ND (4.1)	ND (4.9)	ND (5.2)	ND (0.006)	ND (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	ND (0.65)	ND (0.58)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	ND (4.1)	ND (4.9)	ND (5.2)	ND (0.006)	ND (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	ND (0.65)	ND (0.58)
Cyclohexane	10000	6900	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	1.6 J (4.1)	2 J (4.9)	1.3 J (5.2)	ND (0.006)	0.21 J (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	4.8 (0.65)	3.9 (0.58)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	ND (4.1)	ND (4.9)	ND (5.2)	ND (0.006)	ND (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	ND (0.65)	ND (0.58)
Ethyl Benzene	880	70	0.002 J (0.005)	0.006 J (0.008)	ND (0.004)	ND (0.004)	1.1 J (4.1)	1.2 J (4.9)	ND (5.2)	ND (0.006)	0.2 J (0.43)	ND (0.004)	0.015 (0.006)	0.015 (0.006)	2 (0.65)	2 (0.58)
Hexane	10000	5300	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	1 J (4.1)	1.1 J (4.9)	1.2 J (5.2)	ND (0.006)	0.35 J (0.43)	ND (0.004)	0.001 J (0.006)	ND (0.006)	15 (0.65)	9.6 (0.58)
Methyl tert-butyl ether	8500	2	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	ND (4.1)	ND (4.9)	ND (5.2)	ND (0.006)	0.11 J (0.43)	ND (0.004)	ND (0.006)	ND (0.006)	13 (0.65)	7.7 (0.58)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.005)	ND (0.008)	ND (0.004)	ND (0.004)	2 J (4.1)	3.8 J (4.9)	3.1 J (5.2)	0.002 J (0.006)	0.37 J (0.43)	ND (0.004)	0.007 (0.006)	0.004 J (0.006)	22 (0.65)	17 (0.58)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.2 J (0.22)	1.1 (0.28)	0.004 J (0.018)	ND (0.018)	2 (0.23)	2.9 (0.26)	1.9 (0.13)	0.053 J (0.19)	0.83 (0.11)	0.014 J (0.018)	1.6 (0.24)	1 (0.022)	0.75 (0.091)	0.59 (0.093)
Xylenes (total)	7900	1000	0.46 (0.22)	1.2 (0.28)	0.009 J (0.018)	0.01 J (0.018)	1.8 (0.23)	2.6 (0.26)	1.4 (0.13)	0.26 (0.19)	0.68 (0.11)	0.025 (0.018)	7.4 (0.24)	2 (0.022)	1.2 (0.091)	0.84 (0.093)
Semivolatile Organic Compounds																	
Acenaphthene	190000	4700	0.38 (0.22)	1.6 (0.28)	0.014 J (0.018)	0.012 J (0.018)	1.9 (0.23)	2.5 (0.26)	1.4 (0.13)	0.37 (0.19)	0.55 (0.11)	0.034 (0.018)	3.5 (0.24)	1.7 (0.022)	0.87 (0.091)	0.65 (0.093)
Anthracene	190000	350	0.8 (0.22)	2.2 (0.28)	0.017 J (0.018)	0.015 J (0.018)	2.3 (0.23)	3 (0.26)	1.7 (0.13)	0.57 (0.19)	0.67 (0.11)	0.053 (0.018)	5.1 (0.24)	2.2 (0.022)	1.4 (0.091)	1 (0.093)
Benzo(a)anthracene	130	340	0.43 (0.22)	2 (0.28)	0.016 J (0.018)	0.016 J (0.018)	1.6 (0.23)	1.8 (0.26)	1.1 (0.13)	0.39 (0.19)	0.41 (0.11)	0.046 (0.018)	1.7 (0.24)	1.6 (0.022)	0.74 (0.091)	0.56 (0.093)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.54 (0.22)	1.6 (0.28)	0.012 J (0.018)	0.011 J (0.018)	2.1 (0.23)	3 (0.26)	1.6 (0.13)	0.4 (0.19)	0.8 (0.11)	0.034 (0.018)	7.4 (0.24)	2.2 (0.022)	1.8 (0.091)	1.4 (0.093)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	0.063 J (0.22)	0.36 (0.28)	ND (0.018)	ND (0.018)	1.8 (0.23)	2.2 (0.26)	1.6 (0.13)	ND (0.19)	1 (0.11)	0.004 J (0.018)	0.43 (0.24)	0.22 (0.022)	1.3 (0.091)	1.1 (0.093)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	1.1 (0.22)	12 (0.28)	0.009 J (0.018)	0.009 J (0.018)	64 (0.46)	80 (0.52)	47 (0.53)	0.12 J (0.19)	6.5 (0.11)	0.04 (0.018)	3.4 (0.24)	3.3 (0.022)	4.8 (0.091)	2.8 (0.093)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	0.72 (0.22)	3.1 (0.28)	0.008 J (0.018)	0.008 J (0.018)	5.1 (0.23)	8.4 (0.26)	6.4 (0.13)	0.23 (0.19)	3.5 (0.11)	0.029 (0.018)	5 (0.24)	2.6 (0.022)	4.1 (0.091)	3.4 (0.093)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	0.67 (0.22)	1.6 (0.28)	0.016 J (0.018)	0.014 J (0.018)	3.4 (0.23)	4.7 (0.26)	2.8 (0.13)	0.61 (0.19)	1.8 (0.11)	0.035 (0.018)	12 (0.24)	2.8 (0.022)	2.1 (0.091)	1.4 (0.093)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																	
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	268 (1.37)	291 (2)	6.35 (1.23)	8.79 (1.49)	533 (1.38)	469 (2.22)	306 (2.13)	50.3 (1.35)	62.4 (1.46)	5.12 (1.14)	276 (2.05)	499 (1.79)	192 (1.41)	201 (1.52)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7-BH-16-023	AOI7-BH-16-023	AOI7-BH-16-024	AOI7-BH-16-024	AOI7-BH-16-025	AOI7-BH-16-025	AOI7-BH-16-025	AOI7-BH-16-026	AOI7-BH-16-026	AOI7-BH-16-027	AOI7-BH-16-028	AOI7-BH-16-028	AOI7-BH-16-029	AOI7-BH-16-029
Area			Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	4.8 - 5.0	4.8 - 5.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0
Sample Date			7/1/2016	7/1/2016	7/7/2016	7/7/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/7/2016	7/11/2016	7/12/2016	7/8/2016	7/8/2016
Comments									Field Duplicate							Field Duplicate
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			AOI7-BH-16-030	AOI7-BH-16-031	AOI7-BH-16-032	AOI7-BH-16-033	AOI7-BH-16-034	AOI7-BH-16-034	AOI7-BH-16-035	AOI7-BH-16-036	AOI7-BH-16-036	AOI7-BH-16-037	AOI7-BH-16-037	AOI7-BH-16-038	AOI7-BH-16-038	AOI7-BH-16-038
Area			Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)			2.0 - 4.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0
Sample Date	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	7/11/2016	7/12/2016	7/12/2016	7/11/2016	7/8/2016	7/8/2016	7/8/2016	6/30/2016	6/30/2016	6/29/2016	6/29/2016	6/30/2016	6/30/2016	6/30/2016
Comments																Field Duplicate
Volatile Organic Compounds																
Acetonitrile	4700	53	1.2 J (1.3)	ND (0.4)	ND (0.004)	NA	0.39 J (0.41)	0.12 J (0.54)	0.002 J (0.004)	0.089 J (0.49)	0.11 J (0.58)	ND (2.3)	0.41 J (2.3)	ND (0.005)	ND (0.008)	ND (0.007)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	11 (1.3)	ND (0.4)	ND (0.004)	NA	0.25 J (0.41)	0.47 J (0.54)	ND (0.004)	ND (0.49)	ND (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	0.024 (0.008)	0.011 (0.007)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (1.3)	ND (0.4)	ND (0.004)	NA	ND (0.41)	ND (0.54)	ND (0.004)	ND (0.49)	ND (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	ND (0.008)	ND (0.007)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (1.3)	ND (0.4)	ND (0.004)	NA	ND (0.41)	ND (0.54)	ND (0.004)	ND (0.49)	ND (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	ND (0.008)	ND (0.007)
Cyclohexane	10000	6900	0.3 J (1.3)	ND (0.4)	ND (0.004)	NA	0.15 J (0.41)	0.13 J (0.54)	ND (0.004)	0.11 J (0.49)	0.13 J (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	ND (0.008)	0.002 J (0.007)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (1.3)	ND (0.4)	ND (0.004)	NA	ND (0.41)	ND (0.54)	ND (0.004)	ND (0.49)	ND (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	ND (0.008)	ND (0.007)
Ethyl Benzene	880	70	0.51 J (1.3)	ND (0.4)	ND (0.004)	NA	0.67 (0.41)	1.3 (0.54)	0.002 J (0.004)	1.4 (0.49)	1.5 (0.58)	0.61 J (2.3)	1 J (2.3)	0.001 J (0.005)	0.004 J (0.008)	0.002 J (0.007)
Hexane	10000	5300	0.42 J (1.3)	ND (0.4)	ND (0.004)	NA	1 (0.41)	2 (0.54)	ND (0.004)	0.14 J (0.49)	0.2 J (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	0.013 (0.008)	0.007 (0.007)
Methyl tert-butyl ether	8500	2	ND (1.3)	ND (0.4)	ND (0.004)	NA	ND (0.41)	0.34 J (0.54)	ND (0.004)	ND (0.49)	ND (0.58)	ND (2.3)	ND (2.3)	ND (0.005)	0.013 (0.008)	0.006 J (0.007)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.9 J (1.3)	ND (0.4)	ND (0.004)	NA	1.5 (0.41)	2.8 (0.54)	ND (0.004)	0.26 J (0.49)	0.29 J (0.58)	ND (2.3)	0.85 J (2.3)	ND (0.005)	0.01 (0.008)	0.007 (0.007)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	1.6 (0.098)	0.015 J (0.024)	0.01 J (0.018)	NA	1 (0.12)	2.1 (0.13)	0.34 (0.019)	1.6 (0.27)	3.6 (0.29)	1.2 (0.27)	0.63 (0.28)	0.16 J (0.22)	2.1 (0.25)	1.8 (0.26)
Xylenes (total)	7900	1000	2.2 (0.098)	0.008 J (0.024)	0.03 (0.018)	NA	1.8 (0.12)	1.1 (0.13)	0.72 (0.019)	1.4 (0.27)	2.3 (0.29)	0.89 (0.27)	0.73 (0.28)	0.54 (0.22)	1.7 (0.25)	1.8 (0.26)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	1.4 (0.098)	0.008 J (0.024)	0.038 (0.018)	NA	1.8 (0.12)	0.84 (0.13)	0.55 (0.019)	1.5 (0.27)	1.8 (0.29)	0.91 (0.27)	0.9 (0.28)	0.69 (0.22)	1.7 (0.25)	1.9 (0.26)
Anthracene	190000	350	1.8 (0.098)	0.012 J (0.024)	0.069 (0.018)	NA	2.5 (0.12)	1.2 (0.13)	0.69 (0.019)	2.3 (0.27)	2.3 (0.29)	1.4 (0.27)	1.2 (0.28)	0.8 (0.22)	2.1 (0.25)	2.3 (0.26)
Benzo(a)anthracene	130	340	0.77 (0.098)	0.005 J (0.024)	0.046 (0.018)	NA	1.6 (0.12)	0.81 (0.13)	0.56 (0.019)	1.4 (0.27)	1.1 (0.29)	0.99 (0.27)	0.87 (0.28)	0.72 (0.22)	2.3 (0.25)	2.1 (0.26)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	2.7 (0.098)	0.017 J (0.024)	0.049 (0.018)	NA	2.8 (0.12)	1.5 (0.13)	0.73 (0.019)	1.6 (0.27)	2.7 (0.29)	1.2 (0.27)	0.93 (0.28)	0.65 (0.22)	2.3 (0.25)	2.6 (0.26)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	2.4 (0.098)	0.015 J (0.024)	ND (0.018)	NA	0.83 (0.12)	1.5 (0.13)	0.11 (0.019)	1.1 (0.27)	4.1 (0.29)	0.77 (0.27)	0.45 (0.28)	0.059 J (0.22)	1.5 (0.25)	1.4 (0.26)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	0.68 (0.098)	0.027 (0.024)	0.009 J (0.018)	NA	10 (0.12)	25 (0.13)	0.2 (0.019)	21 (0.27)	17 (0.29)	10 (0.27)	6.7 (0.28)	1.4 (0.22)	17 (0.25)	15 (0.26)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	8.6 (0.098)	0.034 (0.024)	0.031 (0.018)	NA	3.1 (0.12)	6.4 (0.13)	1.4 (0.019)	4.7 (0.27)	6.3 (0.29)	3.9 (0.27)	2.1 (0.28)	0.65 (0.22)	5.8 (0.25)	5.1 (0.26)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	4 (0.098)	0.029 (0.024)	0.062 (0.018)	NA	2.3 (0.12)	1.9 (0.13)	1.3 (0.019)	2.2 (0.27)	6.9 (0.29)	1.5 (0.27)	1.1 (0.28)	0.64 (0.22)	3.1 (0.25)	2.9 (0.26)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	140 (1.61)	3.36 (2.06)	8.24 (1.32)	ND (7.37)	424 (1.96)	375 (2.27)	59.9 (1.57)	368 (2.09)	272 (2.35)	313 (1.88)	227 (1.73)	40.6 (1.61)	329 (1.93)	360 (1.57)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

	Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-030 Unassigned 2.0 - 4.0 7/11/2016	AOI7-BH-16-031 Unassigned 2.0 - 4.0 7/12/2016	AOI7-BH-16-032 Unassigned 0.0 - 2.0 7/12/2016	AOI7-BH-16-033 Tank Group 06 2.0 - 4.0 7/11/2016	AOI7-BH-16-034 Tank Group 06 0.0 - 2.0 7/8/2016	AOI7-BH-16-034 Tank Group 06 2.0 - 4.0 7/8/2016	AOI7-BH-16-035 Unassigned 0.0 - 2.0 7/8/2016	AOI7-BH-16-036 Unassigned 0.0 - 2.0 6/30/2016	AOI7-BH-16-036 Unassigned 2.0 - 4.0 6/30/2016	AOI7-BH-16-037 Unassigned 0.0 - 2.0 6/29/2016	AOI7-BH-16-037 Unassigned 2.0 - 4.0 6/29/2016	AOI7-BH-16-038 Unassigned 0.0 - 2.0 6/30/2016	AOI7-BH-16-038 Unassigned 2.0 - 4.0 6/30/2016	AOI7-BH-16-038 Unassigned 2.0 - 4.0 6/30/2016 Field Duplicate
Other				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																	
	Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-039 Unassigned 0.0 - 2.0 6/29/2016	AOI7-BH-16-040 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-041 Unassigned 0.0 - 2.0 7/6/2016	AOI7-BH-16-041 Unassigned 2.0 - 4.0 7/6/2016	AOI7-BH-16-042 Unassigned 0.0 - 2.0 7/6/2016	AOI7-BH-16-042 Unassigned 2.0 - 4.0 7/6/2016	AOI7-BH-16-043 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-043 Tank Group 06 2.0 - 4.0 6/29/2016	AOI7-BH-16-044 Unassigned 0.0 - 2.0 7/12/2016	AOI7-BH-16-045 Tank Group 06 0.0 - 2.0 7/1/2016	AOI7-BH-16-046 Unassigned 0.0 - 2.0 7/5/2016	AOI7-BH-16-046 Unassigned 2.0 - 4.0 7/8/2016	AOI7-BH-16-047 Unassigned 0.0 - 2.0 7/8/2016	AOI7-BH-16-047 Unassigned 2.0 - 4.0 7/8/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	0.004 J (0.004)	0.001 J (0.004)	0.002 J (0.005)	0.012 (0.007)	0.11 J (0.39)	ND (0.54)	0.002 J (0.005)	0.005 J (0.006)	ND (0.005)	ND (0.004)	0.37 (0.34)	0.14 J (0.38)	0.12 J (0.38)	ND (1.2)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	ND (0.39)	ND (0.54)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	0.61 (0.34)	0.48 (0.38)	ND (0.38)	2.3 (1.2)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	ND (0.39)	ND (0.54)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	ND (0.34)	ND (0.38)	ND (0.38)	ND (1.2)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	ND (0.39)	ND (0.54)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	ND (0.34)	ND (0.38)	ND (0.38)	ND (1.2)
Cyclohexane	10000	6900	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	0.12 J (0.39)	ND (0.54)	ND (0.005)	0.001 J (0.006)	ND (0.005)	ND (0.004)	0.18 J (0.34)	0.11 J (0.38)	0.1 J (0.38)	ND (1.2)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	ND (0.39)	ND (0.54)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	ND (0.34)	ND (0.38)	ND (0.38)	ND (1.2)
Ethyl Benzene	880	70	0.002 J (0.004)	0.001 J (0.004)	ND (0.005)	0.007 J (0.007)	0.7 (0.39)	0.22 J (0.54)	0.002 J (0.005)	0.005 J (0.006)	ND (0.005)	ND (0.004)	0.5 (0.34)	0.4 (0.38)	0.89 (0.38)	ND (1.2)
Hexane	10000	5300	0.001 J (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	0.082 J (0.39)	ND (0.54)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	0.16 J (0.34)	0.11 J (0.38)	0.13 J (0.38)	0.47 J (1.2)
Methyl tert-butyl ether	8500	2	ND (0.004)	ND (0.004)	ND (0.005)	ND (0.007)	ND (0.39)	ND (0.54)	ND (0.005)	0.001 J (0.006)	ND (0.005)	ND (0.004)	ND (0.34)	ND (0.38)	ND (0.38)	ND (1.2)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.002 J (0.004)	0.0008 J (0.004)	ND (0.005)	0.003 J (0.007)	0.3 J (0.39)	ND (0.54)	ND (0.005)	0.001 J (0.006)	ND (0.005)	ND (0.004)	0.88 (0.34)	0.45 (0.38)	0.21 J (0.38)	ND (1.2)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.009 J (0.018)	0.21 (0.037)	0.014 J (0.018)	3.5 (0.12)	2 (0.11)	1.3 (1.2)	1.4 (0.02)	1.1 (0.022)	0.006 J (0.018)	ND (0.019)	3.5 (1)	4.1 (0.22)	1.9 (0.11)	2 (0.48)
Xylenes (total)	7900	1000	0.032 (0.018)	0.33 (0.037)	0.032 (0.018)	4.1 (0.12)	2.7 (0.11)	1.8 (1.2)	3.4 (0.02)	2.6 (0.022)	0.024 (0.018)	0.016 J (0.019)	5 (1)	7.1 (0.22)	2.1 (0.11)	1.8 (0.48)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	0.027 (0.018)	0.25 (0.037)	0.041 (0.018)	3.3 (0.12)	3.3 (0.11)	2 (1.2)	2.4 (0.02)	1.8 (0.022)	0.022 (0.018)	0.02 (0.019)	5.1 (1)	5.3 (0.22)	2.4 (0.11)	1 (0.48)
Anthracene	190000	350	0.037 (0.018)	0.23 (0.037)	0.057 (0.018)	4.7 (0.12)	4.1 (0.11)	2.4 (1.2)	3.1 (0.02)	2.2 (0.022)	0.039 (0.018)	0.03 (0.019)	6.4 (1)	5.9 (0.22)	2.7 (0.11)	1.2 (0.48)
Benzo(a)anthracene	130	340	0.043 (0.018)	0.28 (0.037)	0.035 (0.018)	1.9 (0.12)	2.7 (0.11)	1.4 (1.2)	1.7 (0.02)	1.1 (0.022)	0.024 (0.018)	0.024 (0.019)	3.4 (1)	3.5 (0.22)	2.1 (0.11)	0.77 (0.48)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.009 J (0.019)	2.2 (1)	3.3 (0.22)	1.2 (0.11)	0.49 (0.48)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.063 (0.018)	0.72 (0.037)	0.043 (0.018)	4.3 (0.12)	2.6 (0.11)	2 (1.2)	3.3 (0.02)	2.6 (0.022)	0.03 (0.018)	0.02 (0.019)	5.9 (1)	7.4 (0.22)	2.7 (0.11)	2.7 (0.48)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006 J (0.019)	0.97 J (1)	1.2 (0.22)	0.57 (0.11)	0.23 J (0.48)
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	0.005 J (0.018)	0.27 (0.037)	0.005 J (0.018)	2.4 (0.12)	1.2 (0.11)	0.76 J (1.2)	0.48 (0.02)	0.47 (0.022)	ND (0.018)	ND (0.019)	5.4 (1)	4.3 (0.22)	1 (0.11)	2.8 (0.48)
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	0.02 (0.018)	0.087 (0.037)	0.039 (0.018)	15 (0.12)	8.7 (0.11)	3.8 (1.2)	2.5 (0.02)	2.4 (0.022)	0.004 J (0.018)	0.007 J (0.019)	11 (1)	7.4 (0.22)	10 (0.11)	ND (0.48)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	0.05 (0.018)	1.1 (0.037)	0.032 (0.018)	6.5 (0.12)	4.2 (0.11)	3.2 (1.2)	3.5 (0.02)	2.2 (0.022)	0.018 J (0.018)	0.012 J (0.019)	5.7 (1)	8.4 (0.22)	3.7 (0.11)	9.1 (0.48)
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	0.04 (0.018)	0.78 (0.037)	0.057 (0.018)	9.6 (0.12)	3.6 (0.11)	3.4 (1.2)	4.5 (0.02)	3.9 (0.022)	0.038 (0.018)	0.024 (0.019)	9 (1)	10 (0.22)	3.9 (0.11)	3.9 (0.48)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (1.7)	ND (7.4)	ND (7.8)	ND (1.9)	ND (1.7)
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	42.3 (6.06)	309 (5.59)	26.1 (1.38)	269 (1.73)	256 (1.52)	181 (2.19)	432 (1.57)	2590 (7.11)	ND (29)	4.14 (1.18)	509 (1.51)	408 (1.86)	238 (1.77)	34.1 (1.23)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-039 Unassigned 0.0 - 2.0 6/29/2016	AOI7-BH-16-040 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-041 Unassigned 0.0 - 2.0 7/6/2016	AOI7-BH-16-041 Unassigned 2.0 - 4.0 7/6/2016	AOI7-BH-16-042 Unassigned 0.0 - 2.0 7/6/2016	AOI7-BH-16-042 Unassigned 2.0 - 4.0 7/6/2016	AOI7-BH-16-043 Tank Group 06 0.0 - 2.0 6/29/2016	AOI7-BH-16-043 Tank Group 06 2.0 - 4.0 6/29/2016	AOI7-BH-16-044 Unassigned 0.0 - 2.0 7/12/2016	AOI7-BH-16-045 Tank Group 06 0.0 - 2.0 7/1/2016	AOI7-BH-16-046 Unassigned 0.0 - 2.0 7/5/2016	AOI7-BH-16-046 Unassigned 2.0 - 4.0 7/8/2016	AOI7-BH-16-047 Unassigned 0.0 - 2.0 7/8/2016	AOI7-BH-16-047 Unassigned 2.0 - 4.0 7/8/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.105)	11 (5.75)	4.14 (1.26)	1.15 (0.592)	0.145 (0.107)
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-17-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-18-2019 Unassigned 2.5 - 3.0 3/26/2019	AOI7-BH-19-2019 Unassigned 1.5 - 2.0 3/26/2019	AOI7-BH-20-2019 Unassigned 0.5 - 1.0 3/26/2019	AOI7-BH-21-01 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-02 Unassigned 3.0 - 3.5 11/30/2021	AOI7-BH-21-03 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-04 Unassigned 2.0 - 3.0 11/30/2021	AOI7-BH-21-05 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-07 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-09 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-10 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-11 Unassigned 1.5 - 2.0 1/18/2022
Volatile Organic Compounds																
Acetonitrile	4700	53	1.7 (0.28)	0.011 (0.006)	0.002 J (0.006)	0.003 J (0.007)	0.15 J (0.23)	ND (0.0056)	0.33 (0.32)	0.13 J,IQ (0.22)	0.053 J,IQ (0.28)	ND,IQ (0.32)	0.14 J,IQ (0.29)	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	ND (0.0056)	0.96 (0.32)	0.23 IQ (0.22)	0.78 IQ (0.28)	ND,IQ (0.32)	ND,IQ (0.29)	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	ND (0.0056)	0.31 J (0.32)	0.099 J,IQ (0.22)	0.24 J,IQ (0.28)	ND,IQ (0.32)	ND,IQ (0.29)	NA	NA	NA
Benzene	280	0.5	0.76 (0.28)	ND (0.006)	ND (0.006)	0.036 (0.007)	ND (0.23)	ND (0.0056)	1.1 (0.32)	0.29 IQ (0.22)	0.91 IQ (0.28)	ND,IQ (0.32)	0.053 J,IQ (0.29)	NA	NA	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	0.059 (0.0056)	ND (0.32)	0.027 J,IQ (0.22)	0.079 J,IQ (0.28)	ND,IQ (0.32)	0.08 J,IQ (0.29)	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	ND,IQ (0.00052)	ND,IQ (0.00059)	ND,IQ (0.00052)	ND,IQ (0.00057)	ND,IQ (0.0006)	ND,IQ (0.00058)	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	ND (0.0056)	ND (0.32)	ND,IQ (0.22)	ND,IQ (0.28)	ND,IQ (0.32)	ND,IQ (0.29)	NA	NA	NA
Cyclohexane	10000	6900	0.93 (0.28)	0.0005 J (0.006)	0.0008 J (0.006)	0.007 (0.007)	0.061 J (0.23)	ND (0.0056)	0.35 (0.32)	0.03 J,IQ (0.22)	0.043 J,IQ (0.28)	ND,IQ (0.32)	0.097 J,IQ (0.29)	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	0.012 (0.0056)	0.13 J (0.32)	0.027 J,IQ (0.22)	ND,IQ (0.28)	ND,IQ (0.32)	ND,IQ (0.29)	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.28)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.23)	ND (0.0056)	ND (0.32)	ND,IQ (0.22)	ND,IQ (0.28)	ND,IQ (0.32)	ND,IQ (0.29)	NA	NA	NA
Ethyl Benzene	880	70	4.3 (0.28)	0.004 J (0.006)	0.002 J (0.006)	0.009 (0.007)	0.84 (0.23)	ND (0.0056)	0.32 (0.32)	0.068 J,IQ (0.22)	0.11 J,IQ (0.28)	ND,IQ (0.32)	0.04 J,IQ (0.29)	NA	NA	NA
Hexane	10000	5300	2.7 (0.28)	ND (0.006)	0.002 J (0.006)	0.025 (0.007)	0.079 J (0.23)	ND (0.0056)	0.15 J (0.32)	0.05 J,IQ (0.22)	0.073 J,IQ (0.28)	ND,IQ (0.32)	0.12 J,IQ (0.29)	NA	NA	NA
Methyl tert-butyl ether	8500	2	1.1 (0.28)	ND (0.006)	0.0006 J (0.006)	0.014 (0.007)	0.045 J (0.23)	ND (0.0056)	0.056 J (0.32)	ND,IQ (0.22)	ND,IQ (0.28)	ND,IQ (0.32)	0.044 J,IQ (0.29)	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	9.1 (0.28)	0.003 J (0.006)	0.004 J (0.006)	0.057 (0.007)	0.68 (0.23)	ND (0.011)	1.4 (0.65)	0.18 J,IQ (0.44)	0.29 J,IQ (0.55)	ND,IQ (0.65)	0.56 J,IQ (0.58)	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	0.087 B,IQ (0.018)	1 B,IQ (0.02)	0.33 B,IQ (0.018)	1.2 B,IQ (0.02)	ND,IQ (0.021)	ND (0.19)	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	0.19 B,IQ (0.018)	1.8 B,IQ (0.02)	0.47 B,IQ (0.018)	1.9 B,IQ (0.02)	0.16 B,IQ (0.021)	0.083 J (0.19)	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	0.29 B,IQ (0.018)	1.2 B,IQ (0.02)	0.26 B,IQ (0.018)	2.3 B,IQ (0.02)	ND,IQ (0.021)	0.28 (0.19)	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	0.38 B,IQ (0.018)	1.3 B,IQ (0.02)	0.33 B,IQ (0.018)	2.5 B,IQ (0.02)	0.37 B,IQ (0.021)	0.31 (0.19)	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	0.3 B,IQ (0.018)	1.3 B,IQ (0.02)	0.3 B,IQ (0.018)	2.2 B,IQ (0.02)	0.18 B,IQ (0.021)	0.35 (0.19)	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	0.39 B,IQ (0.018)	0.71 B,IQ (0.02)	0.26 B,IQ (0.018)	1.2 B,IQ (0.02)	0.62 B,IQ (0.021)	0.23 (0.19)	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	0.081 B,IQ (0.018)	0.38 B,IQ (0.02)	0.13 B,IQ (0.018)	0.96 B,IQ (0.02)	0.077 B,IQ (0.021)	0.13 J (0.19)	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	0.044 IQ (0.039)	ND,IQ (0.044)	ND,IQ (0.04)	0.18 IQ (0.043)	ND,IQ (0.046)	ND (0.42)	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	1 B,IQ (0.018)	1.3 B,IQ (0.02)	0.49 B,IQ (0.018)	2.3 B,IQ (0.02)	0.36 B,IQ (0.021)	0.35 (0.19)	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	0.12 B,IQ (0.018)	0.25 B,IQ (0.02)	0.1 B,IQ (0.018)	0.45 B,IQ (0.02)	0.12 B,IQ (0.021)	ND (0.19)	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	ND,IQ (0.039)	ND,IQ (0.044)	ND,IQ (0.04)	ND,IQ (0.043)	ND,IQ (0.046)	ND (0.42)	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	ND,IQ (1.1)	ND,IQ (1.2)	ND,IQ (1.1)	ND,IQ (1.2)	ND,IQ (1.2)	ND (12)	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	0.19 B,IQ (0.018)	2.6 B,IQ (0.02)	0.38 B,IQ (0.018)	4.7 B,IQ (0.02)	0.14 B,IQ (0.021)	0.59 (0.19)	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	0.2 B,IQ (0.018)	1.6 B,IQ (0.02)	0.51 B,IQ (0.018)	1.3 B,IQ (0.02)	ND,IQ (0.021)	0.041 J (0.19)	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	0.18 B,IQ (0.018)	0.61 B,IQ (0.02)	0.24 B,IQ (0.018)	1.1 B,IQ (0.02)	0.28 B,IQ (0.021)	0.21 (0.19)	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	0.2 IQ (0.018)	0.53 IQ (0.02)	0.33 IQ (0.018)	2.1 IQ (0.02)	0.12 IQ (0.021)	0.079 J (0.19)	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	ND,IQ (0.053)	ND,IQ (0.061)	ND,IQ (0.054)	ND,IQ (0.059)	ND,IQ (0.062)	ND (0.58)	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	ND,IQ (0.053)	ND,IQ (0.061)	ND,IQ (0.054)	ND,IQ (0.059)	0.057 J,IQ (0.062)	ND (0.58)	NA	NA	NA
2-Methylnaphthalene	240	100	0.25 J (0.28)	0.02 (0.006)	0.002 J (0.006)	ND (0.007)	ND (0.23)	0.055 IQ (0.018)	0.43 IQ (0.02)	0.19 IQ (0.018)	2 IQ (0.02)	0.084 IQ (0.021)	ND (0.19)	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	0.25 B,IQ (0.018)	5.3 B,IQ (0.1)	0.49 B,IQ (0.018)	5.2 B,IQ (0.098)	0.13 B,IQ (0.021)	0.41 (0.19)	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	ND,IQ (0.039)	ND,IQ (0.044)	ND,IQ (0.04)	ND,IQ (0.043)	ND,IQ (0.046)	ND (0.42)	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	ND,IQ (0.18)	0.091 J,IQ (0.2)	0.11 J,IQ (0.18)	ND,IQ (0.2)	ND,IQ (0.21)	ND (1.9)	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	ND,IQ (0.18)	ND,IQ (0.2)	ND,IQ (0.18)	ND,IQ (0.2)	ND,IQ (0.21)	ND (1.9)	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	0.91 B,IQ (0.018)	2.8 B,IQ (0.02)	0.64 B,IQ (0.018)	4.4 B,IQ (0.02)	0.19 B,IQ (0.021)	0.52 (0.19)	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	ND,IQ (0.18)	ND,IQ (0.2)	ND,IQ (0.18)	ND,IQ (0.2)	ND,IQ (0.21)	ND (1.9)	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	4.5 F2 (0.47)	6.3 (0.44)	13 (0.46)	7.2 (0.42)	15 (0.47)	8.6 (0.41)	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	130 (1.4)	140 (1.3)	180 (1.4)	110 (1.3)	200 (1.4)	300 (1.2)	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-16-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-17-2019 Unassigned 1.0 - 1.5 3/26/2019	AOI7-BH-18-2019 Unassigned 2.5 - 3.0 3/26/2019	AOI7-BH-19-2019 Unassigned 1.5 - 2.0 3/26/2019	AOI7-BH-20-2019 Unassigned 0.5 - 1.0 3/26/2019	AOI7-BH-21-01 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-02 Unassigned 3.0 - 3.5 11/30/2021	AOI7-BH-21-03 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-04 Unassigned 2.0 - 3.0 11/30/2021	AOI7-BH-21-05 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-07 Unassigned 0.0 - 2.0 11/30/2021	AOI7-BH-21-09 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-10 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-11 Unassigned 1.5 - 2.0 1/18/2022
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	21 F2 (0.93)	44 (0.87)	56 (0.93)	19 (0.85)	44 (0.93)	84 (0.82)	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	37 F2 (0.93)	190 (0.87)	410 (0.93)	48 (0.85)	79 (0.93)	590 (0.82)	173 (53.9)	33.8 (5.4)	2190 (54.8)
Mercury	510	10	NA	NA	NA	NA	NA	230 (1.9)	95 (1.7)	300 (1.9)	120 (1.7)	350 (1.9)	940 (8.2)	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-21-12 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-14 Unassigned 1.5 - 2.0 1/18/2022	AOI7-PE-01 Unassigned 3.0 12/12/2019	AOI7-PE-02 Unassigned 4.5 12/12/2019	AOI7-PE-03 Unassigned 3.0 12/12/2019	AOI7-PE-04 Unassigned 2.5 12/12/2019	AOI7-PE-05 Unassigned 2.0 12/12/2019	AOI7-PE-06 Unassigned 4.0 12/12/2019	AOI7-PE-07 Unassigned 2.5 12/12/2019	AOI7-PE-08 Unassigned 4.0 12/12/2019	AOI7-PE-09 Unassigned 2.5 12/12/2019	AOI7-PE-10 Unassigned 2.5 12/12/2019	AOI7-PE-11 Unassigned 4.0 12/12/2019	AOI7-PE-12 Unassigned 3.5 12/12/2019
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	0.2 J (0.34)	ND (0.007)	0.025 (0.007)	0.032 J (0.26)	0.085 J (0.24)	ND (0.38)	0.024 (0.006)	0.001 J (0.006)	0.006 (0.005)	ND (0.006)	0.017 (0.007)	ND (0.26)
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	NA	0.06 J (0.34)	0.0009 J (0.007)	0.003 J (0.007)	0.63 (0.26)	0.034 J (0.24)	0.055 J (0.38)	0.002 J (0.006)	0.001 J (0.006)	ND (0.005)	ND (0.006)	0.19 (0.007)	0.36 (0.26)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	0.04 J (0.34)	ND (0.007)	0.004 J (0.007)	0.028 J (0.26)	ND (0.24)	0.064 J (0.38)	0.005 J (0.006)	0.0008 J (0.006)	0.0007 J (0.005)	ND (0.006)	0.004 J (0.007)	ND (0.26)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	ND (0.34)	0.001 J (0.007)	ND (0.007)	ND (0.26)	ND (0.24)	ND (0.38)	ND (0.006)	ND (0.006)	ND (0.005)	0.0008 J (0.006)	ND (0.007)	ND (0.26)
Ethyl Benzene	880	70	NA	NA	0.19 J (0.34)	ND (0.007)	0.027 (0.007)	0.033 J (0.26)	0.088 J (0.24)	0.077 J (0.38)	0.035 (0.006)	0.001 J (0.006)	0.008 (0.005)	ND (0.006)	0.032 (0.007)	0.022 J (0.26)
Hexane	10000	5300	NA	NA	0.066 J (0.34)	ND (0.007)	0.024 (0.007)	ND (0.26)	ND (0.24)	0.19 J (0.38)	0.013 (0.006)	0.002 J (0.006)	0.002 J (0.005)	ND (0.006)	0.17 (0.007)	ND (0.26)
Methyl tert-butyl ether	8500	2	NA	NA	0.043 J (0.34)	ND (0.007)	0.052 (0.007)	ND (0.26)	0.036 J (0.24)	0.055 J (0.38)	0.006 J (0.006)	ND (0.006)	0.0008 J (0.005)	ND (0.006)	0.14 (0.007)	ND (0.26)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	0.28 J (0.68)	ND (0.015)	0.076 (0.014)	0.097 J (0.53)	0.14 J (0.48)	0.27 J (0.75)	0.036 (0.012)	0.003 J (0.012)	0.004 J (0.011)	ND (0.012)	0.042 (0.013)	ND (0.51)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	0.073 J (0.34)	ND (0.007)	0.007 J (0.007)	ND (0.26)	ND (0.24)	0.57 (0.38)	0.007 (0.006)	0.002 J (0.006)	0.003 J (0.005)	0.0008 J (0.006)	0.004 J (0.007)	ND (0.26)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-BH-21-12 Unassigned 1.5 - 2.0 1/18/2022	AOI7-BH-21-14 Unassigned 1.5 - 2.0 1/18/2022	AOI7-PE-01 Unassigned 3.0 12/12/2019	AOI7-PE-02 Unassigned 4.5 12/12/2019	AOI7-PE-03 Unassigned 3.0 12/12/2019	AOI7-PE-04 Unassigned 2.5 12/12/2019	AOI7-PE-05 Unassigned 2.0 12/12/2019	AOI7-PE-06 Unassigned 4.0 12/12/2019	AOI7-PE-07 Unassigned 2.5 12/12/2019	AOI7-PE-08 Unassigned 4.0 12/12/2019	AOI7-PE-09 Unassigned 2.5 12/12/2019	AOI7-PE-10 Unassigned 2.5 12/12/2019	AOI7-PE-11 Unassigned 4.0 12/12/2019	AOI7-PE-12 Unassigned 3.5 12/12/2019
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	145 (7.1)	144 (6.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-PE-21-01 Unassigned 3.5 11/10/2021	AOI7-PE-21-02 Unassigned 3.2 11/10/2021	AOI7-PE-21-03 Unassigned 2.7 11/10/2021	AOI7-PE-21-04 Unassigned 3.5 11/10/2021	AOI7-PE-21-05 Unassigned 2.8 11/10/2021	AST 283-CV-1 Unassigned 0.0 - 0.5 6/28/2005	AST 283-SB-1 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-2 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-3 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-4 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-5 Unassigned 1.0 - 1.5 6/28/2005	AST-250-SS-1 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-2 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-3 Tank Group 07A 0.0 - 0.5 5/15/2007
Volatile Organic Compounds																
Acetonitrile	4700	53	0.14 J (0.31)	0.077 J (0.4)	0.93 (0.28)	0.28 (0.28)	0.053 J (0.28)	ND (0.027)	ND (0.03)	ND (0.5)	0.059 J (0.026)	0.033 J (0.029)	ND (0.027)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
Acrolein	1.6	0.018	3.7 (0.31)	0.51 (0.4)	0.56 (0.28)	0.49 (0.28)	0.12 J (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	0.33 (0.31)	ND (0.4)	ND (0.28)	ND (0.28)	ND (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	6.7 (0.31)	0.79 (0.4)	1.4 (0.28)	2.2 (0.28)	0.13 J (0.28)	ND (0.054)	ND (0.059)	ND (1)	ND (0.051)	ND (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	0.7 (0.31)	7 (0.4)	13 (0.28)	15 (0.28)	0.29 (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.0006)	ND,F2 (0.00064)	0.0022 (0.00055)	0.0022 (0.00058)	ND (0.00058)	ND (0.054)	ND (0.059)	ND (0.0096)	ND (0.051)	ND (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.31)	ND (0.4)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.054)	ND (0.059)	ND (1)	ND (0.051)	ND (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
Cyclohexane	10000	6900	0.044 J (0.31)	0.092 J (0.4)	0.28 (0.28)	0.16 J (0.28)	ND (0.28)	ND (0.054)	ND (0.059)	ND (0.8)	ND (0.051)	0.064 J (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
1,2-Dibromoethane	3.7	0.005	0.051 J (0.31)	0.097 J (0.4)	11 (0.28)	2.1 (0.28)	0.1 J (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.31)	ND (0.4)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.027)	ND (0.03)	ND (0.5)	ND (0.026)	ND (0.029)	ND (0.027)	NA	NA	NA
Ethyl Benzene	880	70	0.079 J (0.31)	0.23 J (0.4)	1.5 (0.28)	0.24 J (0.28)	ND (0.28)	ND (0.054)	0.073 J (0.059)	ND (0.7)	0.074 J (0.051)	0.2 J (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	ND,D (0.088)
Hexane	10000	5300	0.09 J (0.31)	1.8 (0.4)	9.4 (0.28)	4.4 (0.28)	0.099 J (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	0.034 J (0.31)	0.57 (0.4)	2.3 (0.28)	1.2 (0.28)	0.035 J (0.28)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.41 J (0.62)	0.81 (0.8)	4.3 (0.57)	2.2 (0.56)	0.098 J (0.56)	ND (0.054)	ND (0.059)	ND (0.8)	ND (0.051)	0.17 J (0.059)	ND (0.055)	ND,D (0.081)	ND,D (0.097)	0.098 D (0.088)
1,2,4-Trimethylbenzene	4700	300	4.5 F2 (1)	4.1 (1.1)	6.4 (0.95)	6 (0.99)	0.51 (0.39)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	11 (1)	11 (1.1)	11 (0.95)	9.7 (0.99)	1.7 (0.39)	ND (0.19)	ND (0.96)	0.00072 (0.039)	ND (0.19)	0.46 J (0.19)	ND (0.99)	NA	NA	NA
Xylenes (total)	7900	1000	9.4 (1)	21 (1.1)	6.2 (0.95)	6.7 (0.99)	0.92 (0.39)	ND (0.19)	ND (0.96)	0.003 (0.02)	0.26 J (0.19)	0.92 J (0.19)	ND (0.99)	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	10 (1)	28 (1.1)	5.4 (0.95)	5.1 (0.99)	0.6 (0.39)	ND (0.19)	ND (0.96)	0.0046 (0.098)	0.26 J (0.19)	0.9 J (0.19)	ND (0.99)	NA	NA	NA
Anthracene	190000	350	8.6 B (1)	27 B (1.1)	3.5 B (0.95)	4.8 B (0.99)	0.53 B (0.39)	ND (0.19)	ND (0.96)	0.0024 (0.039)	0.32 J (0.19)	0.85 J (0.19)	ND (0.99)	NA	NA	NA
Benzo(a)anthracene	130	340	5.7 B (1)	16 B (1.1)	2.6 B (0.95)	3.6 B (0.99)	0.44 B (0.39)	0.26 J (0.19)	ND (0.96)	0.0037 (0.098)	ND (0.19)	0.62 J (0.19)	ND (0.99)	NA	NA	NA
Benzo(a)pyrene	91	46	2.9 F2 (1)	9.1 (1.1)	ND (0.95)	1.5 (0.99)	ND (0.39)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	ND (2.3)	1.7 J (2.4)	ND (2.1)	ND (2.2)	ND (0.86)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	13 (1)	24 (1.1)	12 (0.95)	11 (0.99)	1.5 (0.39)	ND (0.19)	1.6 J (0.96)	0.0044 (0.078)	0.22 J (0.19)	1.1 (0.19)	ND (0.99)	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	2.3 (1)	5.9 (1.1)	ND (0.95)	ND (0.99)	ND (0.39)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	ND (2.3)	ND (2.4)	ND (2.1)	ND (2.2)	ND (0.86)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	ND (62)	ND (65)	ND (57)	ND (60)	ND (24)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	13 (1)	27 (1.1)	6.9 (0.95)	8.3 (0.99)	1 (0.39)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	9.7 (1)	7 (1.1)	11 (0.95)	11 (0.99)	1.4 (0.39)	ND (0.19)	ND (0.96)	0.0013 (0.49)	ND (0.19)	0.21 J (0.19)	ND (0.99)	ND (0.35)	ND (0.35)	ND (0.35)
2,4-Dinitrophenol	6400	19	4.7 (1)	15 (1.1)	1.9 (0.95)	2.7 (0.99)	0.35 J (0.39)	ND (0.19)	ND (0.96)	0.0027 (0.078)	ND (0.19)	0.51 J (0.19)	ND (0.99)	NA	NA	NA
Fluoranthene	130000	3200	2.5 (1)	7.3 (1.1)	59 (0.95)	24 (0.99)	2.8 (0.39)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (3.1)	ND (3.2)	ND (2.9)	ND (3)	ND (1.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	ND (3.1)	ND (3.2)	ND (2.9)	ND (3)	ND (1.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	6.3 F2 (1)	23 (1.1)	4.3 (0.95)	4.8 (0.99)	0.22 J (0.39)	ND (0.054)	ND (0.059)	ND (1)	ND (0.051)	0.26 J (0.059)	ND (0.055)	0.052 J,D (0.081)	0.067 J,D (0.097)	0.31 D (0.088)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	18 (1)	19 (1.1)	41 (0.95)	34 (0.99)	5.7 (0.39)	ND (0.19)	ND (0.96)	0.0035 (0.078)	0.37 J (0.19)	0.79 J (0.19)	ND (0.99)	NA	NA	NA
Naphthalene	66	25	ND (2.3)	ND (2.4)	ND (2.1)	ND (2.2)	ND (0.86)	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	26000	6	ND (10)	ND (11)	ND (9.5)	ND (9.9)	ND (3.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	ND (10)	ND (11)	ND (9.5)	ND (9.9)	ND (3.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	25 (1)	29 (1.1)	23 (0.95)	20 (0.99)	3.7 (0.39)	ND (0.19)	ND (0.96)	0.01 (0.18)	0.48 J (0.19)	1 (0.19)	ND (0.99)	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	ND (10)	ND (11)	ND (9.5)	ND (9.9)	ND (3.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	6.8 (0.46)	13 (0.64)	11 (0.41)	7.1 (0.58)	7.4 (0.51)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	54 (1.4)	410 (1.9)	590 (1.2)	190 (1.7)	25 (1.5)	121 (0.879)	317 (0.9)	NA	97.9 (0.891)	113 (0.877)	81.1 (0.906)	940 (0.54)	30 (0.53)	100 (0.54)

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AOI7-PE-21-01 Unassigned 3.5 11/10/2021	AOI7-PE-21-02 Unassigned 3.2 11/10/2021	AOI7-PE-21-03 Unassigned 2.7 11/10/2021	AOI7-PE-21-04 Unassigned 3.5 11/10/2021	AOI7-PE-21-05 Unassigned 2.8 11/10/2021	AST 283-CV-1 Unassigned 0.0 - 0.5 6/28/2005	AST 283-SB-1 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-2 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-3 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-4 Unassigned 1.0 - 1.5 6/28/2005	AST 283-SB-5 Unassigned 1.0 - 1.5 6/28/2005	AST-250-SS-1 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-2 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-3 Tank Group 07A 0.0 - 0.5 5/15/2007
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	54 (0.93)	120 (1.3)	63 (0.81)	29 (1.2)	14 (1)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	35 (0.93)	100 (1.3)	140 (0.81)	59 (1.2)	52 (1)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	190 (1.9)	260 (2.5)	180 (1.6)	56 (2.3)	48 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AST-250-SS-4 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-5 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-6 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-7 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-8 Tank Group 07A 0.0 - 0.5 5/15/2007	B-148 Unassigned 1.0 - 1.5 9/17/2002	B-149 Unassigned 1.0 - 1.5 9/17/2002	B-150 Unassigned 1.0 - 1.5 9/16/2002	B-151 Unassigned 0.5 - 1.0 3/1/2006	B-152 Unassigned 1.5 - 2.0 3/1/2006	B-153 Tank Group 07 1.5 - 2.0 3/1/2006	B-154 Unassigned 1.0 - 1.5 3/1/2006	B-155 Unassigned 1.5 - 2.0 3/20/2006	B-156 Unassigned 1.0 - 1.5 3/20/2006
Volatile Organic Compounds																
Acetonitrile	4700	53	ND,D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.12 D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	2.6 (0.31)	6.5 (0.33)	610 (11)	ND (0.2)	0.46 (0.2)	ND (0.42)	3.6 (0.16)	ND (0.22)	0.009 (0.005)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND,D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND,D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	60 (1.6)	190 (3.3)	270 (11)	ND (0.2)	20 (2)	ND (0.42)	1.8 (0.16)	ND (0.22)	0.007 (0.005)
Cyclohexane	10000	6900	ND,D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.2)	ND (0.2)	ND (0.42)	ND (0.16)	ND (0.22)	ND (0.005)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.2)	ND (0.2)	ND (0.42)	ND (0.16)	ND (0.22)	ND (0.005)
Ethyl Benzene	880	70	ND,D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	3.7 (0.31)	0.52 (0.33)	14 (1.1)	ND (0.2)	0.24 (0.2)	ND (0.42)	1.8 (0.16)	ND (0.22)	ND (0.005)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	ND (0.31)	ND (0.33)	ND (1.1)	ND (0.2)	ND (0.2)	ND (0.42)	ND (0.16)	ND (0.22)	ND (0.005)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.87 D (0.1)	ND,D (0.11)	ND,D (0.069)	ND,D (0.078)	ND,D (0.092)	1.6 (0.31)	ND (0.33)	300 (11)	ND (0.2)	ND (0.2)	ND (0.42)	0.24 (0.16)	ND (0.22)	0.006 (0.005)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	3.5 (0.31)	0.86 (0.33)	67 (1.1)	ND (0.2)	ND (0.2)	ND (0.42)	1.2 (0.16)	ND (0.22)	0.007 (0.005)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.92)	ND (3)	ND (0.28)	6.2 (5.8)	0.75 (0.23)	0.86 (0.21)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	2 (0.92)	ND (3)	ND (0.28)	5.9 (5.8)	0.84 (0.23)	0.83 (0.21)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	1.7 (0.92)	ND (3)	ND (0.28)	ND (5.8)	0.78 (0.23)	0.82 (0.21)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	1.6 (0.92)	ND (3)	ND (0.28)	ND (5.8)	1.1 (0.23)	1.1 (0.21)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.92)	ND (3)	ND (0.28)	ND (5.8)	0.31 (0.23)	0.42 (0.21)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	2.4 (0.92)	ND (3)	ND (0.28)	7.8 (5.8)	0.82 (0.23)	0.92 (0.21)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	0.62 (0.35)	ND (0.37)	ND (0.38)	ND (0.39)	ND (0.35)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	1.1 (0.92)	ND (3)	4.2 (0.28)	7.8 (5.8)	1.1 (0.23)	1.9 (0.21)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	4.2 D (0.1)	0.081 J,D (0.11)	0.065 J,D (0.069)	0.055 J,D (0.078)	0.075 J,D (0.092)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	1.8 (0.31)	1.9 (0.33)	4.8 (1.1)	8.6 (0.92)	ND (3)	ND (0.28)	6.8 (5.8)	0.7 (0.23)	0.37 (0.21)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	2.9 (0.92)	ND (3)	ND (0.28)	31 (5.8)	3 (0.23)	4.3 (0.21)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	5.3 (0.92)	ND (3)	ND (0.28)	15 (5.8)	2.3 (0.23)	2.5 (0.21)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	2.8 (0.54)	190 (0.56)	1500 (0.58)	140 (0.59)	13 (0.54)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	AST-250-SS-4 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-5 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-6 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-7 Tank Group 07A 0.0 - 0.5 5/15/2007	AST-250-SS-8 Tank Group 07A 0.0 - 0.5 5/15/2007	B-148 Unassigned 1.0 - 1.5 9/17/2002	B-149 Unassigned 1.0 - 1.5 9/17/2002	B-150 Unassigned 1.0 - 1.5 9/16/2002	B-151 Unassigned 0.5 - 1.0 3/1/2006	B-152 Unassigned 1.5 - 2.0 3/1/2006	B-153 Tank Group 07 1.5 - 2.0 3/1/2006	B-154 Unassigned 1.0 - 1.5 3/1/2006	B-155 Unassigned 1.5 - 2.0 3/20/2006	B-156 Unassigned 1.0 - 1.5 3/20/2006
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	198 (10.6)	27 (2.32)	66.3 (3.38)	410 (2.29)	618 (2.7)	1070 (2.56)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B-157 Unassigned 1.0 - 1.5 3/1/2006	B-160 Unassigned 1.0 - 1.5 3/1/2006	B-161 Unassigned 1.5 - 2.0 3/1/2006	B-162 Unassigned 1.0 - 1.5 3/1/2006	B-164 Unassigned 1.5 - 2.0 3/1/2006	B-166 Unassigned 1.5 - 2.0 12/13/2012	B-166 Unassigned 2.5 - 3.0 12/13/2012	B-167 Unassigned 1.5 - 2.0 12/13/2012	B-167 Unassigned 3.5 - 4.0 12/13/2012	B-170 Tank Group 07 1.5 - 2.0 12/13/2012	B-171 Tank Group 07 1.0 - 2.0 4/6/2016	B-172 Unassigned 0.5 - 1.0 4/6/2016	B-172 Unassigned 2.5 - 3.0 4/6/2016	B-172 Unassigned 0.5 - 1.0 7/12/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	0.0638 (0.048)	0.136 (0.059)	ND (0.001)	0.001 J (0.004)	0.21 J (0.38)	ND (0.41)	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.24)	ND (0.005)	2.2 (0.44)	ND (0.005)	2.2 (0.37)	ND (0.0074)	ND (0.0085)	3.15 (0.24)	7.21 (0.3)	0.003 J (0.0052)	ND (0.004)	ND (0.38)	ND (0.41)	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	ND (0.048)	ND (0.059)	ND (0.001)	ND (0.004)	ND (0.38)	ND (0.41)	NA
1,2-Dichloroethane	85	0.5	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	ND (0.048)	ND (0.059)	ND (0.001)	ND (0.004)	ND (0.38)	ND (0.41)	NA
Ethyl Benzene	880	70	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	0.395 (0.048)	0.309 (0.059)	ND (0.001)	ND (0.004)	0.1 J (0.38)	ND (0.41)	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	ND (0.048)	ND (0.059)	0.00054 J (0.001)	ND (0.004)	ND (0.38)	ND (0.41)	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.24)	ND (0.005)	ND (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	0.0932 (0.048)	0.163 (0.059)	0.0004 J (0.001)	ND (0.004)	0.58 (0.38)	0.41 (0.41)	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	ND (0.0074)	ND (0.0085)	0.229 J (0.24)	0.481 (0.3)	ND (0.0052)	ND (0.004)	0.11 J (0.38)	ND (0.41)	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	ND (0.0074)	ND (0.0085)	0.101 J (0.24)	0.155 J (0.3)	ND (0.0052)	ND (0.004)	ND (0.38)	ND (0.41)	NA
Xylenes (total)	7900	1000	0.27 (0.24)	ND (0.005)	5.1 (0.44)	ND (0.005)	ND (0.37)	ND (0.0015)	ND (0.0017)	0.806 (0.048)	1.3 (0.059)	ND (0.001)	ND (0.004)	0.51 (0.38)	0.091 J (0.41)	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (1.1)	ND (0.22)	0.36 (0.21)	ND (0.18)	ND (0.2)	0.0812 (0.042)	0.11 (0.042)	0.0325 J (0.034)	1.26 (0.037)	0.257 (0.036)	0.12 (0.09)	NA	NA	0.8 (0.23)
Benzo(a)anthracene	130	340	1.4 (1.1)	ND (0.22)	1.8 (0.21)	0.2 (0.18)	0.35 (0.2)	0.318 (0.042)	0.0939 (0.042)	0.113 (0.034)	2.36 (0.037)	0.578 (0.036)	0.44 (0.09)	NA	NA	2.4 (0.23)
Benzo(a)pyrene	91	46	1.5 (1.1)	ND (0.22)	2.2 (0.21)	0.22 (0.18)	0.41 (0.2)	0.33 (0.042)	0.0956 (0.042)	0.13 (0.034)	2.07 (0.037)	0.659 (0.036)	0.45 (0.09)	NA	NA	1.4 (0.23)
Benzo(b)fluoranthene	76	170	2.1 (1.1)	ND (0.22)	2.7 (0.21)	0.29 (0.18)	0.68 (0.2)	0.293 (0.042)	0.0998 (0.042)	0.15 (0.034)	2.42 (0.037)	0.617 (0.036)	0.54 (0.09)	NA	NA	2.6 (0.23)
Benzo(g,h,i)perylene	190000	180	ND (1.1)	ND (0.22)	1.3 (0.21)	ND (0.18)	0.27 (0.2)	0.228 (0.042)	0.0802 (0.042)	0.121 (0.034)	1.26 (0.037)	0.466 (0.036)	0.29 (0.09)	NA	NA	0.95 (0.23)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	1.4 (1.1)	ND (0.22)	2.1 (0.21)	0.25 (0.18)	0.36 (0.2)	0.334 (0.042)	0.113 (0.042)	0.137 (0.034)	2.25 (0.037)	0.589 (0.036)	0.42 (0.09)	NA	NA	2.3 (0.23)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (1.1)	ND (0.22)	ND (0.21)	ND (0.18)	ND (0.2)	0.0259 J (0.042)	0.126 (0.042)	0.0176 J (0.034)	0.865 (0.037)	0.229 (0.036)	0.044 J (0.09)	NA	NA	0.079 J (0.23)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (1.1)	ND (0.22)	0.34 (0.21)	ND (0.18)	ND (0.2)	0.037 J (0.042)	0.025 J (0.042)	0.0352 (0.034)	0.226 (0.037)	0.114 (0.036)	0.23 (0.09)	NA	NA	1.2 (0.23)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	ND (1.1)	ND (0.22)	0.41 (0.21)	ND (0.18)	0.4 (0.2)	0.285 (0.042)	0.314 (0.042)	0.108 (0.034)	5.2 (0.15)	0.379 (0.036)	0.22 (0.09)	NA	NA	0.93 (0.23)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	1.4 (1.1)	ND (0.22)	2.1 (0.21)	0.32 (0.18)	0.5 (0.2)	0.536 (0.042)	0.301 (0.042)	0.275 (0.034)	4.87 (0.15)	1.16 (0.036)	0.5 (0.09)	NA	NA	3 (0.23)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			B-157	B-160	B-161	B-162	B-164	B-166	B-166	B-167	B-167	B-170	B-171	B-172	B-172	B-172
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	1.0 - 1.5	1.0 - 1.5	1.5 - 2.0	1.0 - 1.5	1.5 - 2.0	1.5 - 2.0	2.5 - 3.0	1.5 - 2.0	3.5 - 4.0	1.5 - 2.0	1.0 - 2.0	0.5 - 1.0	2.5 - 3.0	0.5 - 1.0
Sample Date			3/1/2006	3/1/2006	3/1/2006	3/1/2006	3/1/2006	12/13/2012	12/13/2012	12/13/2012	12/13/2012	12/13/2012	4/6/2016	4/6/2016	4/6/2016	7/12/2016
Comments																
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	178 (2.55)	30.8 (2.54)	70.1 (2.48)	584 (2.09)	18.5 (2.41)	744 (2.6)	1020 (2.8)	253 (2)	204 (2.3)	66.9 (2.3)	45.7 (1.13)	168 (1.33)	208 (1.96)	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B-172 Unassigned 2.5 - 3.0 7/12/2016	B-173 Unassigned 1.0 - 1.5 4/5/2016	B-173 Unassigned 3.5 - 4.0 4/5/2016	B-173 Unassigned 1.0 - 1.5 7/12/2016	B-173 Unassigned 3.5 - 4.0 7/13/2016	B-174 Unassigned 1.0 - 1.5 4/4/2016	B-174 Unassigned 3.5 - 4.0 4/4/2016	B-174 Unassigned 1.0 - 1.5 7/13/2016	B-174 Unassigned 3.5 - 4.0 7/13/2016	B-175 Unassigned 1.5 - 2.0 4/5/2016	B-175 Unassigned 2.7 - 3.0 4/5/2016	B-175 Unassigned 1.5 - 2.0 7/13/2016	B-175 Unassigned 2.7 - 3.0 7/13/2016	B90-1 Unassigned 0.0 - 2.0 8/24/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	NA	0.3 J (0.31)	0.054 J (0.33)	NA	NA	ND (0.004)	0.005 (0.005)	NA	NA	1.1 (0.32)	0.21 J (0.34)	NA	NA	2.2
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	0.36 (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	0.27 J (0.32)	0.58 (0.34)	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	ND (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	ND (0.32)	ND (0.34)	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	ND (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	ND (0.32)	ND (0.34)	NA	NA	NA
Ethyl Benzene	880	70	NA	ND (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	0.35 (0.32)	0.23 J (0.34)	NA	NA	1.8
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	ND (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	ND (0.32)	ND (0.34)	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	0.13 J (0.31)	0.38 (0.33)	NA	NA	ND (0.004)	0.001 J (0.005)	NA	NA	1.3 (0.32)	0.5 (0.34)	NA	NA	2.8
1,2,4-Trimethylbenzene	4700	300	NA	0.31 (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	0.29 J (0.32)	0.88 (0.34)	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	0.13 J (0.31)	ND (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	0.26 J (0.32)	1.5 (0.34)	NA	NA	NA
Xylenes (total)	7900	1000	NA	0.66 (0.31)	0.074 J (0.33)	NA	NA	ND (0.004)	ND (0.005)	NA	NA	1.6 (0.32)	2.2 (0.34)	NA	NA	11
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.27 (0.02)	NA	NA	0.089 J (0.19)	0.19 J (0.2)	NA	NA	0.11 J (0.21)	0.14 J (0.2)	NA	NA	2.4 (0.28)	4.3 (0.24)	NA
Benzo(a)anthracene	130	340	0.48 (0.02)	NA	NA	0.3 (0.19)	0.45 (0.2)	NA	NA	0.6 (0.21)	0.63 (0.2)	NA	NA	1.9 (0.28)	5.6 (0.24)	NA
Benzo(a)pyrene	91	46	0.36 (0.02)	NA	NA	0.33 (0.19)	0.45 (0.2)	NA	NA	0.54 (0.21)	0.52 (0.2)	NA	NA	1.4 (0.28)	4.4 (0.24)	NA
Benzo(b)fluoranthene	76	170	0.5 (0.02)	NA	NA	0.44 (0.19)	0.63 (0.2)	NA	NA	0.71 (0.21)	0.65 (0.2)	NA	NA	1.9 (0.28)	7.7 (0.24)	NA
Benzo(g,h,i)perylene	190000	180	0.23 (0.02)	NA	NA	0.39 (0.19)	0.47 (0.2)	NA	NA	0.39 (0.21)	0.4 (0.2)	NA	NA	1.7 (0.28)	3.3 (0.24)	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.51 (0.02)	NA	NA	0.42 (0.19)	0.65 (0.2)	NA	NA	0.63 (0.21)	0.67 (0.2)	NA	NA	2 (0.28)	5.6 (0.24)	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.11 (0.02)	NA	NA	0.049 J (0.19)	0.16 J (0.2)	NA	NA	ND (0.21)	0.041 J (0.2)	NA	NA	3.6 (0.28)	8.4 (0.24)	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.12 (0.02)	NA	NA	0.27 (0.19)	1.2 (0.2)	NA	NA	0.18 J (0.21)	0.14 J (0.2)	NA	NA	9.3 (0.28)	3.9 (0.24)	0.33 J
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.79 (0.02)	NA	NA	0.34 (0.19)	0.88 (0.2)	NA	NA	0.4 (0.21)	0.53 (0.2)	NA	NA	10 (0.28)	22 (0.24)	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.78 (0.02)	NA	NA	0.49 (0.19)	0.81 (0.2)	NA	NA	0.89 (0.21)	1 (0.2)	NA	NA	2.8 (0.28)	6.3 (0.24)	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B-172 Unassigned 2.5 - 3.0 7/12/2016	B-173 Unassigned 1.0 - 1.5 4/5/2016	B-173 Unassigned 3.5 - 4.0 4/5/2016	B-173 Unassigned 1.0 - 1.5 7/12/2016	B-173 Unassigned 3.5 - 4.0 7/13/2016	B-174 Unassigned 1.0 - 1.5 4/4/2016	B-174 Unassigned 3.5 - 4.0 4/4/2016	B-174 Unassigned 1.0 - 1.5 7/13/2016	B-174 Unassigned 3.5 - 4.0 7/13/2016	B-175 Unassigned 1.5 - 2.0 4/5/2016	B-175 Unassigned 2.7 - 3.0 4/5/2016	B-175 Unassigned 1.5 - 2.0 7/13/2016	B-175 Unassigned 2.7 - 3.0 7/13/2016	B90-1 Unassigned 0.0 - 2.0 8/24/1992
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8 BF
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62.86 J,L
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.08)
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.28)
Lead	1000	450	NA	170 (1.47)	315 (1.99)	NA	NA	6.22 (1.13)	1360 (7.38)	NA	NA	207 (1.49)	255 (2.09)	NA	NA	93.8 BF
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B90-1 Unassigned 2.0 - 4.0 8/24/1992	B90-2 Unassigned 0.0 - 2.0 8/24/1992	B90-2 Unassigned 2.0 - 4.0 8/24/1992	B90-3 Unassigned 2.0 - 4.0 8/24/1992	B90-4 Unassigned 0.0 - 2.0 8/24/1992	B90-5 Unassigned 2.0 - 4.0 8/24/1992	B90-6 Unassigned 2.0 - 4.0 8/26/1992	B90-7 Unassigned 0.0 - 2.0 8/26/1992	B90-8 Unassigned 0.0 - 2.0 8/25/1992	B90-9 Unassigned 0.0 - 2.0 8/24/1992	B90-10 Unassigned 2.0 - 4.0 8/25/1992	B90-10DL Unassigned 2.0 - 4.0 8/25/1992	B90-11 Unassigned 2.0 - 4.0 8/26/1992	B90-12 Unassigned 2.0 - 4.0 8/25/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	ND (19)	NA	ND (15)	ND (15)	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	ND (19)	NA	ND (15)	ND (15)	NA	NA	NA	NA	NA
Benzene	280	0.5	30	2 J	0.003	84	ND (0.89)	21	ND (0.1)	ND (1.1)	NA	0.01	ND (1.3)	NA	ND (0.005)	NA
2-Butanone	10000	400	NA	NA	NA	NA	NA	ND (1.9)	NA	ND (1.5)	ND (1.5)	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	ND (0.96)	NA	ND (0.74)	ND (0.73)	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	ND (1.9)	NA	ND (1.5)	ND (1.5)	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	ND (1.9)	NA	ND (1.5)	ND (1.5)	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	ND (0.96)	NA	ND (0.74)	ND (0.73)	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	27	3 J	ND (0.0017)	4.1	1.9	ND (6)	ND (0.1)	1.2	0.96 L	0.014	33	NA	ND (0.005)	10 L
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	ND (0.96)	NA	ND (0.74)	ND (0.73)	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	ND (1.9)	NA	ND (1.5)	0.5 J	NA	NA	NA	NA	NA
Toluene	10000	100	41	6.2 J	0.003	5.7	3.9	ND (6)	0.65	1.8	0.8 L	0.0078	62	NA	ND (0.005)	14 L
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	140	35 J	0.011	ND (1.3)	18	ND (6)	0.32	5.2	3.8 L	0.31	190	NA	ND (0.005)	37 L
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	ND (0.51)	NA	0.2 J	0.13 J	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	ND (0.51)	NA	0.22 J	0.16 J	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	ND (1.8)	NA	0.42 J	0.26 J	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	ND (0.31)	NA	0.26	0.2 J	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	ND (2.5)	NA	ND (1.9)	ND (1.8)	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	ND (0.51)	NA	0.26 J	0.2 J	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	ND (0.51)	NA	0.26 J	0.24 J	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	ND (1)	NA	0.78 J	1.3	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	ND (1.5)	NA	ND (1.2)	ND (1.1)	NA	NA	NA	NA	NA
Naphthalene	66	25	67	0.31 J	0.31 J	0.31 J	3.2	ND (0.51)	0.75	1.4	2.6	0.32 J	8 J	6.9	1	13 J
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	ND (2.5)	NA	ND (1.9)	ND (1.8)	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	ND (0.51)	NA	0.2 J	0.14 J	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	ND (0.51)	NA	ND (0.39)	ND (0.37)	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	0.55	NA	0.3 B	0.34 J	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	ND (0.51)	NA	0.23 J	0.19 J	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B90-1 Unassigned 2.0 - 4.0 8/24/1992	B90-2 Unassigned 0.0 - 2.0 8/24/1992	B90-2 Unassigned 2.0 - 4.0 8/24/1992	B90-3 Unassigned 2.0 - 4.0 8/24/1992	B90-4 Unassigned 0.0 - 2.0 8/24/1992	B90-5 Unassigned 2.0 - 4.0 8/24/1992	B90-6 Unassigned 2.0 - 4.0 8/26/1992	B90-7 Unassigned 0.0 - 2.0 8/26/1992	B90-8 Unassigned 0.0 - 2.0 8/25/1992	B90-9 Unassigned 0.0 - 2.0 8/24/1992	B90-10 Unassigned 2.0 - 4.0 8/25/1992	B90-10DL Unassigned 2.0 - 4.0 8/25/1992	B90-11 Unassigned 2.0 - 4.0 8/26/1992	B90-12 Unassigned 2.0 - 4.0 8/25/1992
Other			NA	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	1.9 L	NA	ND,L (1.2)	ND,L (1.1)	NA	NA	NA	NA	NA
Arsenic	61	29	10 BF	2 BF	17.9 BF	31.1 BF	1.3 BF	5.8 BF	20.9 BF	3.3 BF	2.9 BF	11.5 BF	1.5 BF	NA	15.9 BF	4.4 BF
Barium	190000	8200	NA	NA	NA	NA	NA	159	NA	88.6	59.5	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	1.2	NA	0.82	ND (0.57)	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	0.93	NA	ND (0.59)	ND (0.57)	NA	NA	NA	NA	NA
Chromium III	190000	190000	19.45 J,L	16.26 J,L	77.035 J,L	63.64 J,L	27.46 J,L	37.225 J	64.835 J,L	22.34 J	16.245 J	43.045 J,L	4.66 J,L	NA	66.24 J,L	29.355 J,L
Chromium VI	180	190	ND (0.1)	ND (0.08)	ND (0.13)	ND (0.12)	ND (0.08)	ND (0.15)	ND (0.13)	ND (0.12)	ND (0.11)	ND (0.11)	ND (0.08)	NA	ND (0.12)	ND (0.09)
Cobalt	960	130	NA	NA	NA	NA	NA	16.4	NA	11.4	5.1	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	1.1	ND (0.28)	3.8	3.7	ND (0.28)	2.1	5.6	0.54	1.6	2.7	0.59	NA	2.1	0.88
Lead	1000	450	138 BF	16 L	464 BF	313 BF	78.5 BF	188	388 BF	148	233	236 BF	243 BF	NA	381 BF	115 BF
Mercury	510	10	NA	NA	NA	NA	NA	0.78 J	NA	0.22 J	0.62 J	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	27.5	NA	17.3	12.6	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	ND (0.62)	NA	ND (0.47)	ND (0.45)	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	19.3	NA	15.2	15.7	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

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Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B90-12DL Unassigned 2.0 - 4.0 8/25/1992	B90-13 Unassigned 0.0 - 2.0 8/25/1992	B90-13 Unassigned 2.0 - 4.0 8/25/1992	B90-13DL Unassigned 0.0 - 2.0 8/25/1992	B90-14 Unassigned 2.0 - 4.0 8/25/1992	B90-14DL Unassigned 2.0 - 4.0 8/25/1992	B90-15 Unassigned 2.0 - 4.0 8/25/1992	B90-16 Unassigned 0.0 - 2.0 8/26/1992	B90-16 Unassigned 2.0 - 4.0 8/26/1992	B91-1 Unassigned 2.0 - 4.0 8/27/1992	B91-2 Unassigned 2.0 - 4.0 8/27/1992	B91-3 Unassigned 1.0 - 4.0 8/27/1992	B91-4 Unassigned 2.0 - 4.0 8/27/1992	B91-5 Unassigned 2.0 - 4.0 8/26/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.056)	NA	NA
Acrolein	1.6	0.018	NA	NA	ND (170)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.11)	NA	NA
Acrylonitrile	33	0.37	NA	NA	ND (170)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.11)	NA	NA
Benzene	280	0.5	NA	ND (0.17)	ND (0.83)	NA	3.8 J	NA	NA	ND (1.2)	29	0.64	ND (1.3)	ND (1.1)	ND (0.092)	ND (1.5)
2-Butanone	10000	400	NA	NA	ND (17)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.011)	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	ND (8.3)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.006)	NA	NA
Cumene	10000	2500	NA	NA	13 J	NA	NA	NA	NA	NA	NA	NA	NA	0.072	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	ND (17)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.011)	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	ND (8.3)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.006)	NA	NA
Ethyl Benzene	880	70	NA	1.2	13	NA	75 J	NA	3.5 L	1.4	6.5	1.5	1.9	2.5	0.31	1.6
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	ND (8.3)	NA	NA	NA	NA	NA	NA	NA	NA	0.005 B	NA	NA
Propylbenzene	10000	1700	NA	NA	18	NA	NA	NA	NA	NA	NA	NA	NA	0.036	NA	NA
Toluene	10000	100	NA	1.2	18	NA	130 J	NA	2 L	2	4.5	1.9	ND (1.3)	ND (1.1)	2.6	ND (1.5)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	8.2	68	NA	500 J	NA	4 L	4.1	18	2.2	8	6.3	0.82	3.3
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
Benzo(a)anthracene	130	340	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
Benzo(a)pyrene	91	46	NA	NA	0.81 J	NA	NA	NA	NA	NA	NA	NA	NA	0.12 J	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	1.3 J	NA	NA	NA	NA	NA	NA	NA	NA	0.23 J	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	0.91	NA	NA	NA	NA	NA	NA	NA	NA	0.13 J	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	ND (4.3)	NA	NA	NA	NA	NA	NA	NA	NA	ND (1.8)	NA	NA
Fluoranthene	130000	3200	NA	NA	1.3	NA	NA	NA	NA	NA	NA	NA	NA	0.16 J	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	0.67 J	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.75)	NA	NA
3&4-Methylphenol	16000	49	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
4-Methylphenol	16000	49	NA	NA	ND (2.7)	NA	NA	NA	NA	NA	NA	NA	NA	ND (1.1)	NA	NA
Naphthalene	66	25	11	13 J	11	12	34 J	35	0.67	2.9	2.3	0.53	3.5	0.2 J	1.5	0.45 J
4-Nitrophenol	26000	6	NA	NA	ND (4.3)	NA	NA	NA	NA	NA	NA	NA	NA	ND (1.8)	NA	NA
Phenanthrene	190000	10000	NA	NA	0.79 J	NA	NA	NA	NA	NA	NA	NA	NA	0.17 J	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
Dimethylphthalate	--	--	NA	NA	ND (0.88)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.37)	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	0.73 J	NA	NA	NA	NA	NA	NA	NA	NA	0.82 B	NA	NA
Pyrene	96000	2200	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA	NA	0.15 J	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B90-12DL Unassigned 2.0 - 4.0 8/25/1992	B90-13 Unassigned 0.0 - 2.0 8/25/1992	B90-13 Unassigned 2.0 - 4.0 8/25/1992	B90-13DL Unassigned 0.0 - 2.0 8/25/1992	B90-14 Unassigned 2.0 - 4.0 8/25/1992	B90-14DL Unassigned 2.0 - 4.0 8/25/1992	B90-15 Unassigned 2.0 - 4.0 8/25/1992	B90-16 Unassigned 0.0 - 2.0 8/26/1992	B90-16 Unassigned 2.0 - 4.0 8/26/1992	B91-1 Unassigned 2.0 - 4.0 8/27/1992	B91-2 Unassigned 2.0 - 4.0 8/27/1992	B91-3 Unassigned 1.0 - 4.0 8/27/1992	B91-4 Unassigned 2.0 - 4.0 8/27/1992	B91-5 Unassigned 2.0 - 4.0 8/26/1992
Other			NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
Metals																
Antimony	1300	27	NA	NA	ND,L (1.3)	NA	NA	NA	NA	NA	NA	NA	NA	1.3 L	NA	NA
Arsenic	61	29	NA	6.8 BF	5.3 BF	NA	3 BF	NA	17.5 BF	6.9 BF	7.5 BF	13.8 BF	6.3 BF	1.4 BF	9.6 BF	4.8 BF
Barium	190000	8200	NA	NA	88.9	NA	NA	NA	NA	NA	NA	NA	NA	33.9	NA	NA
Beryllium	6400	320	NA	NA	ND (0.66)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.56)	NA	NA
Cadmium	1600	38	NA	NA	ND (0.66)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.56)	NA	NA
Chromium III	190000	190000	NA	8.445 J,L	24.035 J	NA	25.755 J,L	NA	31.04 J,L	49.355 J,L	56.645 J,L	587.95 J,L	166.935 J,L	15.345 J	49.825 J,L	83.44 J,L
Chromium VI	180	190	NA	ND (0.11)	ND (0.13)	NA	ND (0.09)	NA	ND (0.12)	ND (0.09)	ND (0.11)	ND (0.1)	ND,L (0.13)	ND (0.11)	ND,L (0.15)	ND (0.12)
Cobalt	960	130	NA	NA	10.2	NA	NA	NA	NA	NA	NA	NA	NA	13.3	NA	NA
Cyanide (total)	1900	200	NA	0.97	1.4	NA	0.6	NA	2.1	0.8	2.7	2.3	1.9	ND (0.28)	1.3	0.04
Lead	1000	450	NA	80.3 BF	148	NA	110 BF	NA	198 BF	310 BF	321 BF	257 BF	195	19.8	258	305 BF
Mercury	510	10	NA	NA	0.43 J	NA	NA	NA	NA	NA	NA	NA	NA	0.13 J	NA	NA
Nickel	64000	650	NA	NA	18.7	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA
Selenium	16000	26	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.45)	NA	NA
Vanadium	16000	49000	NA	NA	13.8	NA	NA	NA	NA	NA	NA	NA	NA	15.2	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B91-6 Unassigned 2.0 - 4.0 8/27/1992	B91-7 Unassigned 0.0 - 2.0 8/26/1992	B91-8 Unassigned 0.0 - 2.0 8/26/1992	B91-9 Tank Group 06 0.0 - 2.0 8/28/1992	B91-9 Tank Group 06 2.0 - 4.0 8/28/1992	B91-10 Tank Group 06 2.0 - 4.0 8/28/1992	B91-11 Tank Group 06 2.0 - 4.0 8/31/1992	B91-12 Tank Group 06 2.0 - 4.0 8/31/1992	B91-13 Tank Group 06 2.0 - 4.0 8/31/1992	B91-14 Tank Group 06 2.0 - 4.0 8/31/1992	B91-15 Tank Group 06 2.0 - 4.0 8/28/1992	B91-16 Tank Group 06 2.0 - 4.0 8/28/1992	B91-16RE Tank Group 06 2.0 - 4.0 8/26/1992	B91-17 Tank Group 06 2.0 - 4.0 8/28/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	ND (0.057)	NA	NA	NA	ND (0.075)	NA	NA	NA	NA	ND (0.071)	NA	NA
Acrolein	1.6	0.018	ND (13)	NA	ND (0.11)	NA	NA	NA	ND (0.15)	NA	NA	NA	NA	ND (0.14)	NA	NA
Acrylonitrile	33	0.37	ND (13)	NA	ND (0.11)	NA	NA	NA	ND (0.15)	NA	NA	NA	NA	ND (0.14)	NA	NA
Benzene	280	0.5	ND (1)	ND (1.1)	1.7	ND (0.068)	ND (1.1)	ND (0.089)	0.19	ND (0.0016)	ND (0.0015)	0.13	ND (0.11)	0.15	NA	0.18
2-Butanone	10000	400	ND (1.3)	NA	ND (0.011)	NA	NA	NA	0.033	NA	NA	NA	NA	ND (0.014)	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	ND (0.66)	NA	ND (0.006)	NA	NA	NA	ND (0.007)	NA	NA	NA	NA	ND (0.007)	NA	NA
Cumene	10000	2500	1.5	NA	ND (0.011)	NA	NA	NA	ND (0.015)	NA	NA	NA	NA	ND (0.014)	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (1.3)	NA	ND (0.011)	NA	NA	NA	ND (0.015)	NA	NA	NA	NA	ND (0.014)	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.66)	NA	ND (0.006)	NA	NA	NA	ND (0.007)	NA	NA	NA	NA	ND (0.007)	NA	NA
Ethyl Benzene	880	70	3.6	1.3	1.2	0.17	2.8	0.29	0.1	ND (0.0016)	ND (0.0015)	0.097	0.27	ND (0.089)	NA	0.097
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	ND (0.66)	NA	ND (0.006)	NA	NA	NA	0.01 B	NA	NA	NA	NA	ND (0.007)	NA	NA
Propylbenzene	10000	1700	1.6	NA	ND (0.011)	NA	NA	NA	ND (0.015)	NA	NA	NA	NA	ND (0.014)	NA	NA
Toluene	10000	100	ND (1)	ND (1.1)	1.1	ND (0.068)	ND (1.1)	2.6	0.95	ND (0.0016)	0.0017	0.42	0.74	0.65	NA	0.22
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	14	3.8	3.9	0.57	7.9	2.5	0.16	ND (0.0016)	0.0042	0.11	0.17	ND (0.089)	NA	0.41
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	0.18 L	NA
Benzo(a)anthracene	130	340	ND (0.35)	NA	ND (0.38)	NA	NA	NA	0.35 J	NA	NA	NA	NA	0.17 L	0.65 L	NA
Benzo(a)pyrene	91	46	ND (0.35)	NA	ND (0.38)	NA	NA	NA	0.38 J	NA	NA	NA	NA	0.18 L	0.45 L	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	0.15 J	NA	0.32 J	NA	NA	NA	0.69 J	NA	NA	NA	NA	0.32 L	0.42 L	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	ND (0.21)	NA	0.29	NA	NA	NA	0.37	NA	NA	NA	NA	0.19 L	0.62 L	NA
Dibenz(a,h)anthracene	22	270	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	ND (1.7)	NA	ND (1.8)	NA	NA	NA	ND (2.4)	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	0.16 J	NA	0.15 J	NA	NA	NA	0.44 J	NA	NA	NA	NA	0.21 L	0.79 L	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	ND (0.35)	NA	ND (0.38)	NA	NA	NA	0.21 J	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	0.56 J	NA	ND (0.77)	NA	NA	NA	ND (1)	NA	NA	NA	NA	NA	0.37 L	NA
3&4-Methylphenol	16000	49	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	ND (1.1)	NA	ND (1.1)	NA	NA	NA	ND (1.5)	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.81	1.4	ND (0.38)	ND (0.36)	0.78	2.1	0.31 J	ND (0.52)	0.33 J	0.61	0.77 J	NA	0.56 L	1.1
4-Nitrophenol	26000	6	ND (1.7)	NA	ND (1.8)	NA	NA	NA	ND (2.4)	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.14 J	NA	ND (0.38)	NA	NA	NA	0.32 J	NA	NA	NA	NA	0.19 L	0.98 L	NA
bis(2-Ethylhexyl)phthalate	6500	130	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	ND (0.35)	NA	ND (0.38)	NA	NA	NA	ND (0.49)	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	0.58 B	NA	0.57 B	NA	NA	NA	0.63 B	NA	NA	NA	NA	0.34 B	0.32 L	NA
Pyrene	96000	2200	0.14 J	NA	ND (0.38)	NA	NA	NA	0.37 J	NA	NA	NA	NA	0.2 L	0.71 L	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B91-6 Unassigned 2.0 - 4.0 8/27/1992	B91-7 Unassigned 0.0 - 2.0 8/26/1992	B91-8 Unassigned 0.0 - 2.0 8/26/1992	B91-9 Tank Group 06 0.0 - 2.0 8/28/1992	B91-9 Tank Group 06 2.0 - 4.0 8/28/1992	B91-10 Tank Group 06 2.0 - 4.0 8/28/1992	B91-11 Tank Group 06 2.0 - 4.0 8/31/1992	B91-12 Tank Group 06 2.0 - 4.0 8/31/1992	B91-13 Tank Group 06 2.0 - 4.0 8/31/1992	B91-14 Tank Group 06 2.0 - 4.0 8/31/1992	B91-15 Tank Group 06 2.0 - 4.0 8/28/1992	B91-16 Tank Group 06 2.0 - 4.0 8/28/1992	B91-16RE Tank Group 06 2.0 - 4.0 8/26/1992	B91-17 Tank Group 06 2.0 - 4.0 8/28/1992
Other			ND	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	1.7 L	NA	2.5 L	NA	NA	NA	ND,L (1.5)	NA	NA	NA	NA	ND,L (1.4)	NA	NA
Arsenic	61	29	11.8 BF	1.7 BF	3.2 BF	1.9 BF	3 BF	10.9 BF	5.7 BF	6.4 BF	5.9 BF	23.3 BF	12.2 BF	8.8 BF	NA	5.1 BF
Barium	190000	8200	151	NA	160	NA	NA	NA	208	NA	NA	NA	NA	178	NA	NA
Beryllium	6400	320	0.53	NA	0.69	NA	NA	NA	1.9	NA	NA	NA	NA	1.7	NA	NA
Cadmium	1600	38	ND (0.53)	NA	ND (0.57)	NA	NA	NA	1.5	NA	NA	NA	NA	ND (0.72)	NA	NA
Chromium III	190000	190000	162.945 J	20.66 J,L	1729.945 J	23.545 J,L	16.745 J,L	45.83 J,L	55.125 J	35.12 J,L	73.43 J,L	68.24 J,L	54.51 J,L	42.93 J	NA	31.43 J,L
Chromium VI	180	190	ND (0.11)	ND (0.08)	ND (0.11)	ND,L (0.11)	ND,L (0.11)	ND,L (0.14)	ND (0.15)	ND,L (0.16)	0.17 L	0.16 L	ND,L (0.18)	ND (0.14)	NA	ND,L (0.14)
Cobalt	960	130	5.8	NA	4.8	NA	NA	NA	26.6	NA	NA	NA	NA	20.5	NA	NA
Cyanide (total)	1900	200	0.48	ND (0.27)	0.39	ND (0.27)	0.49	1.8	1.4	ND (0.39)	1.8	1.5	5.2	1.3	NA	0.54
Lead	1000	450	369	8.1 BF	306	117	110	299	307	121	304	354	300	222	NA	197
Mercury	510	10	ND,J (0.08)	NA	0.11 J	NA	NA	NA	1.8 J	NA	NA	NA	NA	2.1 J	NA	NA
Nickel	64000	650	16	NA	17.9	NA	NA	NA	48.4	NA	NA	NA	NA	45.5	NA	NA
Selenium	16000	26	ND (0.42)	NA	ND (0.46)	NA	NA	NA	3.8	NA	NA	NA	NA	3.3	NA	NA
Vanadium	16000	49000	66.6	NA	195	NA	NA	NA	28.8	NA	NA	NA	NA	23.8	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B91-18 Tank Group 06 2.0 - 4.0 8/28/1992	B91-19 Tank Group 06 0.0 - 2.0 8/28/1992	B91-20 Tank Group 06 2.0 - 4.0 8/28/1992	B91-21 Tank Group 06 2.0 - 4.0 8/28/1992	B91-22 Tank Group 06 2.0 - 4.0 8/28/1992	BH-02-06 Unassigned 1.5 - 2.0 3/22/2006	BH-03-06 Unassigned 1.5 - 2.0 3/22/2006	BH-10-05 Unassigned 1.5 - 2.0 6/9/2010	BH-10-06 Unassigned 1.2 - 1.7 6/9/2010	BH-10-07 Unassigned 1.0 - 1.5 6/10/2010	BH-10-08 Unassigned 1.5 - 2.0 6/10/2010	BH-10-10 Unassigned 1.5 - 2.0 6/10/2010	BH-10-11 Unassigned 1.5 - 2.0 6/10/2010	BH-10-12 Unassigned 1.5 - 2.0 6/10/2010
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	ND (17)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	ND (17)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.087)	1.1	ND (0.091)	ND (0.0012)	ND (0.1)	NA	NA	0.003 J (0.008)	0.0007 J (0.006)	ND (0.005)	0.37 J (0.46)	0.16 J (0.47)	0.056 J (0.26)	0.004 J (0.007)
2-Butanone	10000	400	ND (1.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	ND (0.87)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	7.3	NA	NA	NA	NA	NA	NA	0.004 J (0.008)	ND (0.006)	ND (0.005)	27 (0.46)	0.18 J (0.47)	ND (0.26)	ND (0.007)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (1.7)	NA	NA	NA	NA	NA	NA	ND (0.008)	ND (0.006)	ND (0.005)	ND (0.46)	ND (0.47)	ND (0.26)	ND (0.007)
1,2-Dichloroethane	85	0.5	ND (0.87)	NA	NA	NA	NA	NA	NA	ND (0.008)	ND (0.006)	ND (0.005)	ND (0.46)	ND (0.47)	ND (0.26)	ND (0.007)
Ethyl Benzene	880	70	ND (0.087)	1.6	ND (0.091)	0.0017	ND (0.1)	NA	NA	0.002 J (0.008)	ND (0.006)	ND (0.005)	0.15 J (0.46)	0.18 J (0.47)	0.09 J (0.26)	ND (0.007)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	ND (0.008)	ND (0.006)	ND (0.005)	ND (0.46)	ND (0.47)	ND (0.26)	ND (0.007)
Methylene Chloride	10000	0.5	0.85 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	7.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	2.7	1.2	2.6	0.0037	4.4	NA	NA	0.005 J (0.008)	0.002 J (0.006)	ND (0.005)	0.12 J (0.46)	0.7 (0.47)	0.19 J (0.26)	0.007 J (0.007)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	0.007 J (0.008)	0.002 J (0.006)	ND (0.005)	0.21 J (0.46)	0.89 (0.47)	0.43 (0.26)	0.006 J (0.007)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	0.006 J (0.008)	ND (0.006)	ND (0.005)	ND (0.46)	0.099 J (0.47)	0.085 J (0.26)	0.003 J (0.007)
Xylenes (total)	7900	1000	4.4	2.2	3.2	0.0078	4.1	NA	NA	0.017 (0.008)	ND (0.006)	ND (0.005)	0.69 (0.46)	0.57 (0.47)	0.3 (0.26)	0.007 (0.007)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.65	NA	NA	NA	NA	NA	NA	0.54 (0.2)	0.87 (0.21)	ND (1.9)	2.5 (2.3)	1.2 (0.2)	1.3 (0.19)	1.7 (0.2)
Benzo(a)anthracene	130	340	1.6	NA	NA	NA	NA	NA	NA	1.1 (0.2)	1.9 (0.21)	ND (1.9)	2.6 (2.3)	1.4 (0.2)	3.3 (0.19)	2.4 (0.2)
Benzo(a)pyrene	91	46	1.7	NA	NA	NA	NA	NA	NA	1 (0.2)	1.9 (0.21)	ND (1.9)	2.2 J (2.3)	1.4 (0.2)	2.7 (0.19)	2.1 (0.2)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	1.3 (0.2)	2.5 (0.21)	ND (1.9)	2.1 J (2.3)	1.7 (0.2)	3.6 (0.19)	2.7 (0.2)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	0.96 (0.2)	1.6 (0.21)	ND (1.9)	1.6 J (2.3)	1 (0.2)	1.4 (0.19)	1.5 (0.2)
Benzo[b/j/k]fluoranthenes	--	--	3.4 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	1.7	NA	NA	NA	NA	NA	NA	1.1 (0.2)	2 (0.21)	ND (1.9)	8.3 (2.3)	1.8 (0.2)	3.4 (0.19)	2.5 (0.2)
Dibenz(a,h)anthracene	22	270	ND (0.46)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (0.46)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	ND (2.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	0.34 (0.2)	0.36 (0.21)	ND (1.9)	35 (2.3)	0.93 (0.2)	0.64 (0.19)	1.3 (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	0.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	ND (0.46)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	0.2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	3.7	2.3	2.4	0.37 J	1.8	NA	NA	1 (0.2)	3.3 (0.21)	ND (1.9)	ND (2.3)	3.3 (0.2)	1.5 (0.19)	3.8 (0.2)
4-Nitrophenol	26000	6	ND (2.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	2.3	NA	NA	NA	NA	NA	NA	1.2 (0.2)	2.3 (0.21)	ND (1.9)	20 (2.3)	2 (0.2)	2.9 (0.19)	3.8 (0.2)
bis(2-Ethylhexyl)phthalate	6500	130	ND (0.46)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	ND (0.46)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	1.1 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	2.7	NA	NA	NA	NA	NA	NA	1.7 (0.2)	2.8 (0.21)	ND (1.9)	8.9 (2.3)	3 (0.2)	6.6 (1.9)	4.5 (0.2)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	B91-18 Tank Group 06 2.0 - 4.0 8/28/1992	B91-19 Tank Group 06 0.0 - 2.0 8/28/1992	B91-20 Tank Group 06 2.0 - 4.0 8/28/1992	B91-21 Tank Group 06 2.0 - 4.0 8/28/1992	B91-22 Tank Group 06 2.0 - 4.0 8/28/1992	BH-02-06 Unassigned 1.5 - 2.0 3/22/2006	BH-03-06 Unassigned 1.5 - 2.0 3/22/2006	BH-10-05 Unassigned 1.5 - 2.0 6/9/2010	BH-10-06 Unassigned 1.2 - 1.7 6/9/2010	BH-10-07 Unassigned 1.0 - 1.5 6/10/2010	BH-10-08 Unassigned 1.5 - 2.0 6/10/2010	BH-10-10 Unassigned 1.5 - 2.0 6/10/2010	BH-10-11 Unassigned 1.5 - 2.0 6/10/2010	BH-10-12 Unassigned 1.5 - 2.0 6/10/2010
Other			ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	ND,L (1.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	8 BF	6.5 BF	6.8 BF	3.1 BF	8.5 BF	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	141	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	ND (0.69)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	46.53 J	30.53 J,L	25.33 J,L	71.64 J,L	56.82 J,L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	ND (0.14)	ND,L (0.14)	ND,L (0.14)	ND,L (0.12)	ND,L (0.16)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	18.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	1.3	0.92	1	0.34	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	182	1110	189	191	270	1260 (3.4)	1650 (2.92)	411 (1.13)	266 (1.21)	305 (1.12)	444 (1.38)	725 (2.35)	184 (0.555)	414 (1.17)
Mercury	510	10	0.95 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	33.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	22.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-10-13 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-14 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-15 Tank Group 06 1.4 - 1.9 6/9/2010	BH-10-16 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-17 Unassigned 1.5 - 2.0 6/9/2010	BH-10-18 Unassigned 1.5 - 2.0 6/9/2010	BH-10-19 Unassigned 0.5 - 1.0 6/9/2010	BH-10-20 Unassigned 1.3 - 1.7 6/8/2010	BH-10-21 Unassigned 1.0 - 1.5 6/8/2010	BH-10-22 Unassigned 1.5 - 2.0 6/8/2010	BH-10-23 Unassigned 1.0 - 1.5 6/7/2010	BH-10-24 Unassigned 1.0 - 1.5 6/7/2010	BH-10-25 Unassigned 1.2 - 1.7 6/7/2010	BH-10-26 Unassigned 1.5 - 2.0 6/7/2010
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.002 J (0.006)	0.26 J (0.4)	0.004 J (0.006)	0.85 J (0.88)	0.46 (0.29)	0.0008 J (0.007)	ND (0.005)	0.003 J (0.006)	ND (0.007)	0.005 J (0.007)	0.019 (0.008)	0.094 J (0.36)	31 (4.9)	0.003 J (0.006)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.006)	ND (0.4)	ND (0.006)	9.1 (0.88)	0.3 (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	0.28 J (0.36)	ND (0.49)	ND (0.006)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.006)	ND (0.4)	ND (0.006)	ND (0.88)	ND (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	ND (0.36)	ND (0.49)	ND (0.006)
1,2-Dichloroethane	85	0.5	ND (0.006)	ND (0.4)	ND (0.006)	ND (0.88)	ND (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	ND (0.36)	ND (0.49)	ND (0.006)
Ethyl Benzene	880	70	ND (0.006)	0.22 J (0.4)	ND (0.006)	ND (0.88)	0.8 (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	0.78 (0.36)	0.51 (0.49)	ND (0.006)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.006)	ND (0.4)	ND (0.006)	ND (0.88)	ND (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	ND (0.36)	ND (0.49)	ND (0.006)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.003 J (0.006)	0.95 (0.4)	0.002 J (0.006)	0.34 J (0.88)	2.3 (0.29)	0.002 J (0.007)	ND (0.005)	0.001 J (0.006)	ND (0.007)	0.014 (0.007)	0.01 (0.008)	0.18 J (0.36)	2.8 (0.49)	0.002 J (0.006)
1,2,4-Trimethylbenzene	4700	300	ND (0.006)	0.29 J (0.4)	ND (0.006)	0.24 J (0.88)	4.4 (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	0.83 (0.36)	0.2 J (0.49)	ND (0.006)
1,3,5-Trimethylbenzene	4700	93	ND (0.006)	0.12 J (0.4)	ND (0.006)	ND (0.88)	2.4 (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	ND (0.007)	ND (0.007)	ND (0.008)	0.34 J (0.36)	ND (0.49)	ND (0.006)
Xylenes (total)	7900	1000	ND (0.006)	1.1 (0.4)	ND (0.006)	0.69 J (0.88)	7.5 (0.29)	ND (0.007)	ND (0.005)	ND (0.006)	0.001 J (0.007)	0.002 J (0.007)	0.003 J (0.008)	0.89 (0.36)	1.3 (0.49)	ND (0.006)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	1.6 (0.19)	1 (0.19)	0.57 (0.19)	1.9 J (2.2)	0.57 (0.18)	1 (0.22)	0.67 (0.18)	0.88 (0.19)	2.9 (0.22)	0.79 (0.19)	0.052 J (0.18)	0.083 J (0.18)	0.45 (0.25)	3.6 (0.21)
Benzo(a)anthracene	130	340	5 (1.9)	1.3 (0.19)	1.7 (0.19)	3.5 (2.2)	0.58 (0.18)	1.4 (0.22)	2.1 (0.18)	1.8 (0.19)	4.4 (0.22)	1.1 (0.19)	0.2 (0.18)	0.27 (0.18)	0.36 (0.25)	5.8 (1)
Benzo(a)pyrene	91	46	4.2 (0.19)	1.2 (0.19)	1.4 (0.19)	2.8 (2.2)	0.51 (0.18)	1.5 (0.22)	2.3 (0.18)	1.7 (0.19)	3.8 (0.22)	1.1 (0.19)	0.24 (0.18)	0.31 (0.18)	0.38 (0.25)	4.3 (0.21)
Benzo(b)fluoranthene	76	170	5.7 (1.9)	1.6 (0.19)	2 (0.19)	3.5 (2.2)	0.54 (0.18)	1.7 (0.22)	3.1 (0.18)	2.3 (0.19)	4.5 (0.22)	1.6 (0.19)	0.32 (0.18)	0.43 (0.18)	0.77 (0.25)	6.1 (1)
Benzo(g,h,i)perylene	190000	180	2.9 (0.19)	1.1 (0.19)	0.97 (0.19)	2.2 J (2.2)	0.32 (0.18)	1.2 (0.22)	2.5 (0.18)	1.4 (0.19)	2.9 (0.22)	1.2 (0.19)	0.14 J (0.18)	0.18 (0.18)	0.27 (0.25)	1.2 (0.21)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	4.6 (1.9)	1.4 (0.19)	1.6 (0.19)	4.7 (2.2)	0.93 (0.18)	1.6 (0.22)	2.2 (0.18)	1.7 (0.19)	4.7 (0.22)	1.3 (0.19)	0.21 (0.18)	0.28 (0.18)	0.44 (0.25)	5.4 (1)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.53 (0.19)	0.41 (0.19)	0.23 (0.19)	ND (2.2)	0.9 (0.18)	0.53 (0.22)	0.19 (0.18)	0.32 (0.19)	0.97 (0.22)	0.25 (0.19)	ND (0.18)	0.08 J (0.18)	0.17 J (0.25)	1.1 (0.21)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	1 (0.19)	4.9 (1.9)	0.31 (0.19)	ND (2.2)	1.4 (0.18)	3.1 (0.22)	ND (0.18)	1.2 (0.19)	9.2 (2.2)	3.7 (0.19)	0.11 J (0.18)	1.4 (0.18)	5.5 (0.25)	3.3 (0.21)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	4.5 (0.19)	2.6 (0.19)	2.4 (0.19)	11 (2.2)	2.3 (0.18)	2.4 (0.22)	2.5 (0.18)	2.6 (0.19)	4.2 (0.22)	2 (0.19)	0.17 J (0.18)	0.48 (0.18)	1.6 (0.25)	2.8 (0.21)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	7.3 (1.9)	1.8 (0.19)	2.7 (0.19)	8 (2.2)	1.4 (0.18)	2.4 (0.22)	3.5 (0.18)	2.8 (0.19)	7.7 (2.2)	1.5 (0.19)	0.31 (0.18)	0.44 (0.18)	0.54 (0.25)	8.2 (1)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-10-13 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-14 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-15 Tank Group 06 1.4 - 1.9 6/9/2010	BH-10-16 Tank Group 06 1.5 - 2.0 6/9/2010	BH-10-17 Unassigned 1.5 - 2.0 6/9/2010	BH-10-18 Unassigned 1.5 - 2.0 6/9/2010	BH-10-19 Unassigned 0.5 - 1.0 6/9/2010	BH-10-20 Unassigned 1.3 - 1.7 6/8/2010	BH-10-21 Unassigned 1.0 - 1.5 6/8/2010	BH-10-22 Unassigned 1.5 - 2.0 6/8/2010	BH-10-23 Unassigned 1.0 - 1.5 6/7/2010	BH-10-24 Unassigned 1.0 - 1.5 6/7/2010	BH-10-25 Unassigned 1.2 - 1.7 6/7/2010	BH-10-26 Unassigned 1.5 - 2.0 6/7/2010
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	320 (1.12)	531 (2.83)	280 (1.11)	616 (2.63)	47.8 (0.218)	478 (1.27)	365 (1.07)	179 (0.549)	869 (2.55)	304 (1.13)	623 (2.19)	411 (1.06)	79.4 (0.289)	2040 (6.13)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-10-27 Unassigned 1.5 - 2.0 6/8/2010	BH-10-28 Unassigned 1.5 - 2.0 6/7/2010	BH-10-29 Unassigned 0.7 - 1.2 6/7/2010	BH-10-30 Unassigned 1.5 - 2.0 6/7/2010	BH-10-31 Unassigned 1.5 - 2.0 6/8/2010	BH-10-32 Unassigned 0.5 - 1.0 6/8/2010	BH-10-33 Tank Group 06 1.5 - 2.0 6/8/2010	BH-10-34 Tank Group 06 1.0 - 1.5 6/8/2010	BH-10-35 Tank Group 06 1.3 - 1.7 6/8/2010	BH-13-06 Tank Group 07A 1.0 - 1.5 3/22/2006	BH-14-06 Tank Group 07A 0.5 - 1.0 3/23/2006	BH-20-06 Unassigned 1.0 - 1.5 3/20/2006	BH-21-06 Unassigned 1.5 - 2.0 3/20/2006	BH-22-06 Unassigned 1.5 - 2.0 3/21/2006
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (4.6)	1.6 (0.37)	0.01 (0.005)	0.38 J (0.44)	0.47 J (0.49)	0.004 J (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	0.29 (0.2)	0.34 (0.19)	ND (0.004)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	6.5 (4.6)	2.1 (0.37)	ND (0.005)	ND (0.44)	0.17 J (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	9.7 (2)	32 (1.9)	ND (0.004)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (4.6)	ND (0.37)	ND (0.005)	ND (0.44)	ND (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	ND (0.2)	ND (0.19)	ND (0.004)
1,2-Dichloroethane	85	0.5	ND (4.6)	ND (0.37)	ND (0.005)	ND (0.44)	ND (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	ND (0.2)	ND (0.19)	ND (0.004)
Ethyl Benzene	880	70	2.4 J (4.6)	27 (3.7)	ND (0.005)	0.29 J (0.44)	0.63 (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	0.46 (0.2)	0.81 (0.19)	ND (0.004)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (4.6)	ND (0.37)	ND (0.005)	ND (0.44)	ND (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	ND (0.2)	ND (0.19)	ND (0.004)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	1.7 J (4.6)	6.5 (0.37)	0.028 (0.005)	1.7 (0.44)	1.7 (0.49)	0.007 (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	0.41 (0.2)	ND (0.19)	ND (0.004)
1,2,4-Trimethylbenzene	4700	300	16 (4.6)	280 (37)	ND (0.005)	0.24 J (0.44)	1.1 (0.49)	0.002 J (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	8 (4.6)	130 (3.7)	ND (0.005)	ND (0.44)	0.45 J (0.49)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	9 (4.6)	250 (3.7)	0.006 (0.005)	0.81 (0.44)	3.8 (0.49)	0.009 (0.006)	ND (0.005)	ND (0.005)	ND (0.005)	NA	NA	1 (0.2)	0.83 (0.19)	ND (0.004)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	2.6 (2.1)	ND (2.1)	ND (0.18)	1 (0.21)	0.82 (0.24)	0.13 J (0.2)	ND (0.18)	ND (0.18)	0.29 (0.18)	NA	NA	2.5 (2.1)	ND (1.8)	ND (0.19)
Benzo(a)anthracene	130	340	3.4 (2.1)	0.61 J (2.1)	0.21 (0.18)	1.3 (0.21)	0.61 (0.24)	0.18 J (0.2)	ND (0.18)	ND (0.18)	0.79 (0.18)	NA	NA	3.8 (2.1)	ND (1.8)	ND (0.19)
Benzo(a)pyrene	91	46	3.8 (2.1)	0.6 J (2.1)	0.23 (0.18)	1.5 (0.21)	0.61 (0.24)	0.21 (0.2)	ND (0.18)	ND (0.18)	0.82 (0.18)	NA	NA	4.9 (2.1)	ND (1.8)	0.35 (0.19)
Benzo(b)fluoranthene	76	170	5.5 (2.1)	1.3 J (2.1)	0.36 (0.18)	2.3 (0.21)	0.91 (0.24)	0.27 (0.2)	ND (0.18)	ND (0.18)	0.84 (0.18)	NA	NA	6.3 (2.1)	ND (1.8)	0.4 (0.19)
Benzo(g,h,i)perylene	190000	180	3.4 (2.1)	0.64 J (2.1)	ND (0.18)	0.74 (0.21)	0.66 (0.24)	0.25 (0.2)	ND (0.18)	ND (0.18)	0.61 (0.18)	NA	NA	2.9 (2.1)	ND (1.8)	0.29 (0.19)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	4.4 (2.1)	0.68 J (2.1)	0.24 (0.18)	1.6 (0.21)	0.8 (0.24)	0.27 (0.2)	ND (0.18)	ND (0.18)	0.85 (0.18)	NA	NA	4.2 (2.1)	ND (1.8)	ND (0.19)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	1.7 J (2.1)	0.59 J (2.1)	ND (0.18)	0.5 (0.21)	0.32 (0.24)	ND (0.2)	ND (0.18)	ND (0.18)	ND (0.18)	NA	NA	71 (4.2)	ND (1.8)	ND (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	21 (2.1)	30 (2.1)	0.2 (0.18)	11 (1.1)	7.3 (2.4)	0.64 (0.2)	ND (0.18)	ND (0.18)	ND (0.18)	NA	NA	ND (2.1)	ND (1.8)	ND (0.19)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	8.9 (2.1)	1.8 J (2.1)	0.21 (0.18)	2.9 (0.21)	2.5 (0.24)	0.3 (0.2)	ND (0.18)	ND (0.18)	0.84 (0.18)	NA	NA	37 (2.1)	ND (1.8)	ND (0.19)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	6.5 (2.1)	1.3 J (2.1)	0.29 (0.18)	1.7 (0.21)	0.77 (0.24)	0.29 (0.2)	ND (0.18)	0.19 (0.18)	1.7 (0.18)	NA	NA	6.9 (2.1)	ND (1.8)	0.22 (0.19)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-10-27 Unassigned 1.5 - 2.0 6/8/2010	BH-10-28 Unassigned 1.5 - 2.0 6/7/2010	BH-10-29 Unassigned 0.7 - 1.2 6/7/2010	BH-10-30 Unassigned 1.5 - 2.0 6/7/2010	BH-10-31 Unassigned 1.5 - 2.0 6/8/2010	BH-10-32 Unassigned 0.5 - 1.0 6/8/2010	BH-10-33 Tank Group 06 1.5 - 2.0 6/8/2010	BH-10-34 Tank Group 06 1.0 - 1.5 6/8/2010	BH-10-35 Tank Group 06 1.3 - 1.7 6/8/2010	BH-13-06 Tank Group 07A 1.0 - 1.5 3/22/2006	BH-14-06 Tank Group 07A 0.5 - 1.0 3/23/2006	BH-20-06 Unassigned 1.0 - 1.5 3/20/2006	BH-21-06 Unassigned 1.5 - 2.0 3/20/2006	BH-22-06 Unassigned 1.5 - 2.0 3/21/2006
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	393 (1.26)	155 (0.614)	395 (1.08)	250 (1.22)	610 (1.43)	298 (1.2)	43.1 (0.214)	84.2 (0.216)	92.5 (0.215)	283 (3.15)	1040 (2.87)	145 (2.44)	286 (2.15)	165 (2.16)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-23-06 Unassigned 1.0 - 1.5 3/21/2006	BH-24-06 Unassigned 1.0 - 1.5 3/21/2006	BH-25-06 Unassigned 1.0 - 1.5 3/21/2006	BH-26-06 Tank Group 07 0.5 - 1.0 3/24/2006	BH-27-06 Tank Group 07 1.0 - 1.5 3/23/2006	BH-27-09 Unassigned 0.0 - 2.0 4/8/2009	BH-28-06 Unassigned 1.0 - 1.5 3/23/2006	BH-28-09 Unassigned 0.0 - 2.0 4/8/2009	BH-29-06 Unassigned 1.5 - 2.0 3/21/2006	BH-29-09 Unassigned 0.0 - 2.0 4/8/2009	BH-30-09 Unassigned 0.0 - 2.0 4/8/2009	BH-31-09 Unassigned 0.0 - 2.0 7/13/2009	BH-32-09 Unassigned 0.0 - 2.0 7/13/2009	BNA-1 Unassigned 4.0 - 6.0 8/18/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.21)	ND (0.17)	2.3 (0.22)	180 (18)	2.2 (0.18)	NA	1.3 (0.38)	NA	0.41 (0.23)	NA	NA	NA	NA	0.0019
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	0.81 (0.21)	9.9 (0.17)	2.7 (0.22)	800 (18)	9.1 (0.18)	NA	6.4 (0.38)	NA	0.99 (0.23)	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.21)	ND (0.17)	ND (0.22)	ND (0.18)	ND (0.18)	NA	ND (0.38)	NA	ND (0.23)	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.21)	ND (0.17)	ND (0.22)	ND (0.18)	ND (0.18)	NA	ND (0.38)	NA	ND (0.23)	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.21)	ND (0.17)	0.3 (0.22)	2.7 (0.18)	1.6 (0.18)	NA	0.67 (0.38)	NA	ND (0.23)	NA	NA	NA	NA	0.015
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.21)	ND (0.17)	ND (0.22)	ND (0.18)	ND (0.18)	NA	ND (0.38)	NA	ND (0.23)	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.21)	0.2 (0.17)	1.7 (0.22)	260 (18)	ND (0.18)	NA	0.59 (0.38)	NA	ND (0.23)	NA	NA	NA	NA	0.0015
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	0.37 (0.21)	0.56 (0.17)	1.1 (0.22)	9.3 (0.18)	0.77 (0.18)	NA	0.58 (0.38)	NA	0.56 (0.23)	NA	NA	NA	NA	0.025
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	1.3 (0.63)	3.9 (1.9)	10 (2.1)	ND (0.18)	3.3 (1.9)	NA	2.5 (0.19)	NA	27 (2.1)	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.79 (0.63)	ND (1.9)	5.3 (2.1)	ND (0.18)	ND (1.9)	NA	4 (0.19)	NA	70 (10)	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	1.1 (0.63)	ND (1.9)	6 (2.1)	ND (0.18)	ND (1.9)	NA	4.2 (0.96)	NA	59 (10)	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	1.2 (0.63)	ND (1.9)	8.1 (2.1)	ND (0.18)	ND (1.9)	NA	6 (0.96)	NA	75 (10)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.89 (0.63)	ND (1.9)	3.6 (2.1)	ND (0.18)	ND (1.9)	NA	1.9 (0.19)	NA	29 (2.1)	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	1.3 (0.63)	2 (1.9)	4.8 (2.1)	ND (0.18)	ND (1.9)	NA	4.3 (0.19)	NA	73 (10)	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	3.5 (0.63)	63 (3.9)	120 (10)	ND (0.18)	16 (1.9)	NA	12 (0.96)	NA	14 (2.1)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.98 (0.63)	ND (1.9)	2.4 (2.1)	ND (0.18)	12 (1.9)	NA	1 (0.19)	NA	2.4 (2.1)	NA	NA	NA	NA	ND,J (0.46)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	7.4 (0.63)	46 (1.9)	120 (10)	0.21 (0.18)	36 (1.9)	NA	16 (0.96)	NA	91 (10)	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	1.6 (0.63)	5.8 (1.9)	11 (2.1)	0.3 (0.18)	2 (1.9)	NA	8.9 (0.96)	NA	110 (10)	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
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Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BH-23-06 Unassigned 1.0 - 1.5 3/21/2006	BH-24-06 Unassigned 1.0 - 1.5 3/21/2006	BH-25-06 Unassigned 1.0 - 1.5 3/21/2006	BH-26-06 Tank Group 07 0.5 - 1.0 3/24/2006	BH-27-06 Tank Group 07 1.0 - 1.5 3/23/2006	BH-27-09 Unassigned 0.0 - 2.0 4/8/2009	BH-28-06 Unassigned 1.0 - 1.5 3/23/2006	BH-28-09 Unassigned 0.0 - 2.0 4/8/2009	BH-29-06 Unassigned 1.5 - 2.0 3/21/2006	BH-29-09 Unassigned 0.0 - 2.0 4/8/2009	BH-30-09 Unassigned 0.0 - 2.0 4/8/2009	BH-31-09 Unassigned 0.0 - 2.0 7/13/2009	BH-32-09 Unassigned 0.0 - 2.0 7/13/2009	BNA-1 Unassigned 4.0 - 6.0 8/18/1992
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.7
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	868.945 J,L,BF
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,L (0.11)
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.42
Lead	1000	450	417 (2.48)	233 (2.31)	231 (2.46)	32.6 (2.15)	167 (2.26)	463 (1.16)	200 (2.23)	993 (2.6)	2520 (2.48)	409 (1.07)	2310 (11.3)	501 (1.06)	186 (1.08)	115
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BNA-2 Unassigned 4.0 - 6.0 8/18/1992	BNA-3 Unassigned 0.0 - 2.0 8/21/1992	BNA-3 Unassigned 4.0 - 6.0 8/21/1992	BNA-4 Unassigned 2.0 - 4.0 8/18/1992	BNA-5 Unassigned 2.0 - 4.0 8/18/1992	BNA-6 Unassigned 2.0 - 4.0 8/18/1992	BNA-6 Unassigned 6.0 - 8.0 8/18/1992	BNA-7 Tank Group 06 2.0 - 4.0 8/17/1992	BNA-8 Tank Group 06 2.0 - 4.0 8/17/1992	BNA-9 Tank Group 06 2.0 - 4.0 8/17/1992	BNA-10 Tank Group 06 2.0 - 4.0 8/17/1992	BNA-10DL Tank Group 06 2.0 - 4.0 8/17/1992	BNA-10RE Tank Group 06 2.0 - 4.0 8/17/1992	BNA-11 Tank Group 06 0.0 - 2.0 8/17/1992
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	ND (0.058)	NA	NA	NA	NA	NA	NA	ND,J (0.062)	NA	ND (0.062)	NA
Acrolein	1.6	0.018	NA	NA	NA	ND (0.12)	NA	NA	NA	NA	NA	NA	ND,J (0.12)	NA	ND (0.12)	NA
Acrylonitrile	33	0.37	NA	NA	NA	ND (0.12)	NA	NA	NA	NA	NA	NA	ND,J (0.12)	NA	ND (0.12)	NA
Benzene	280	0.5	0.0037	0.0057	ND (0.0013)	ND (0.0058)	0.012	ND (0.0067)	0.0084	ND (1.2)	ND (1.1)	2.1 J	ND (0.96)	NA	0.006 J	ND (0.89)
2-Butanone	10000	400	NA	NA	NA	0.055	NA	NA	NA	NA	NA	NA	0.048 J	NA	0.041	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	0.004 J	NA	NA	NA	NA	NA	NA	0.005 J	NA	0.01 J	NA
Cumene	10000	2500	NA	NA	NA	ND (0.012)	NA	NA	NA	NA	NA	NA	ND,J (0.012)	NA	0.005 J	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	ND (0.012)	NA	NA	NA	NA	NA	NA	ND,J (0.012)	NA	ND (0.012)	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	ND (0.006)	NA	NA	NA	NA	NA	NA	ND,J (0.006)	NA	ND (0.006)	NA
Ethyl Benzene	880	70	0.0014	0.0033	0.0019	0.0087	0.0069	ND (0.0067)	0.02	1.7	4.5	4.1 J	ND (0.96)	NA	NA	1.3
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	0.013 B	NA	NA	NA	NA	NA	NA	0.012 B	NA	0.015 B	NA
Propylbenzene	10000	1700	NA	NA	NA	ND (0.012)	NA	NA	NA	NA	NA	NA	ND,J (0.012)	NA	ND (0.012)	NA
Toluene	10000	100	ND (0.0012)	0.0027	ND (0.0013)	ND (0.0058)	ND (0.0062)	ND (0.0067)	ND (0.0082)	ND (1.2)	ND (1.1)	ND,J (1)	ND (0.96)	NA	0.009	ND (0.89)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	0.0021	0.028	0.0069	0.034	0.049	0.027	0.07	4.8	1.5	7 J	5.2	NA	0.045	2.5
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	NA	0.27 J	NA	NA	NA	NA	NA	NA	3.6	3.6 J	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	1.4 J	NA	NA	NA	NA	NA	NA	4.9	5.1 J	NA	NA
Benzo(a)pyrene	91	46	NA	NA	NA	1.5 J	NA	NA	NA	NA	NA	NA	3.8	4.8 J	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	0.89 J	NA	NA	NA	NA	NA	NA	7 J	3.3 J	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	1.4 J	NA	NA	NA	NA	NA	NA	4.8	5.3 J	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	ND,J (0.38)	NA	NA	NA	NA	NA	NA	ND (0.41)	ND,J (1.4)	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	ND,J (0.38)	NA	NA	NA	NA	NA	NA	ND (0.41)	ND,J (1.4)	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	ND,J (1.9)	NA	NA	NA	NA	NA	NA	ND (2)	ND,J (6.7)	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	1.4 J	NA	NA	NA	NA	NA	NA	12 J	11 J	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	0.72 J	NA	NA	NA	NA	NA	NA	1.6	2.1 J	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	ND,J (0.78)	NA	NA	NA	NA	NA	NA	0.75 J	0.66 J	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	ND,J (0.38)	NA	NA	NA	NA	NA	NA	ND (0.41)	ND,J (1.4)	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	ND,J (1.2)	NA	NA	NA	NA	NA	NA	ND (1.2)	ND,J (4.2)	NA	NA
Naphthalene	66	25	0.19 J	0.17 J	ND (0.42)	0.25 J	2.9 J	0.48	0.18 J	0.69	0.78	ND,J (2.4)	0.68	0.69 J	NA	ND (0.35)
4-Nitrophenol	26000	6	NA	NA	NA	ND,J (1.9)	NA	NA	NA	NA	NA	NA	ND (2)	ND,J (6.7)	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	0.75 J	NA	NA	NA	NA	NA	NA	9.2 J	9.4 J	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	ND,J (0.38)	NA	NA	NA	NA	NA	NA	ND (0.41)	ND,J (1.4)	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	ND,J (0.38)	NA	NA	NA	NA	NA	NA	0.13 J	ND,J (1.4)	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	0.69 B	NA	NA	NA	NA	NA	NA	1.1 B	1.1 B	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			BNA-2	BNA-3	BNA-3	BNA-4	BNA-5	BNA-6	BNA-6	BNA-7	BNA-8	BNA-9	BNA-10	BNA-10DL	BNA-10RE	BNA-11
Area			Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Collection Depth (ft bgs)	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	4.0 - 6.0	0.0 - 2.0	4.0 - 6.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	6.0 - 8.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	0.0 - 2.0
Sample Date			8/18/1992	8/21/1992	8/21/1992	8/18/1992	8/18/1992	8/18/1992	8/18/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992	8/17/1992
Comments																
Other			NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA
Metals																
Antimony	1300	27	NA	NA	NA	ND,L (1.2)	NA	NA	NA	NA	NA	NA	104 L	NA	NA	NA
Arsenic	61	29	12.7	13.4	12	11.2 BF	7.9	17.3	27.8	18.1	25.4	11.9	22 BF	NA	NA	4.9
Barium	190000	8200	NA	NA	NA	162	NA	NA	NA	NA	NA	NA	830	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	0.58	NA	NA	NA	NA	NA	NA	ND (0.69)	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	0.58	NA	NA	NA	NA	NA	NA	2.2	NA	NA	NA
Chromium III	190000	190000	226.955 J,L,BF	149.945 J,L,BF	62.45 J,L,BF	32.14 J	52.455 J,L,BF	62.35 J,L,BF	30.24 J,L,BF	68.85 J,L,BF	75.75 J,L,BF	156.77 L,BF	77.74 J	NA	NA	29.99 L,BF
Chromium VI	180	190	ND,L (0.09)	ND,L (0.11)	ND,L (0.1)	ND (0.12)	ND,L (0.09)	ND,L (0.1)	ND,L (0.12)	ND,L (0.1)	ND,L (0.1)	0.23 L	ND (0.12)	NA	NA	0.21 L
Cobalt	960	130	NA	NA	NA	11.4	NA	NA	NA	NA	NA	NA	11.6	NA	NA	NA
Cyanide (total)	1900	200	0.46	0.44	0.36	0.41	0.62	2.5	2.1	4.8	1.9	0.74	2.4	NA	NA	ND (0.27)
Lead	1000	450	973	650	528	291	450	204	62	513	540	887	5200	NA	NA	32.3
Mercury	510	10	NA	NA	NA	3.1 J	NA	NA	NA	NA	NA	NA	3.7 J	NA	NA	NA
Nickel	64000	650	NA	NA	NA	21.1	NA	NA	NA	NA	NA	NA	66.6	NA	NA	NA
Selenium	16000	26	NA	NA	NA	0.7	NA	NA	NA	NA	NA	NA	1.1	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	43.6	NA	NA	NA	NA	NA	NA	43.1	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BNA-11	BNA-12	BNA-12	BNA-13	BNA-13	BNA-14	C-129	C-130	C-131	C-136	C-137	C-138	C-139	C-140
Area			Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Unassigned	Tank Group 06
Collection Depth (ft bgs)			4.0 - 6.0	0.0 - 2.0	2.0 - 4.0	2.0 - 4.0	6.0 - 8.0	0.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	1.0 - 2.0
Sample Date			8/17/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	8/14/1992	6/2/2010	6/2/2010	6/3/2010	5/28/2010	5/27/2010	5/27/2010	6/2/2010	5/26/2010
Comments																
Volatile Organic Compounds																
Acetonitrile	4700	53	ND (9.5)	NA	ND (0.071)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	ND (19)	NA	ND (0.14)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	ND (19)	NA	ND (0.14)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	4.8 J	0.0014	0.0094	0.048 J	5.7	0.002	0.003 J (0.006)	ND (0.005)	ND (0.006)	0.007 (0.005)	ND (0.005)	0.012 J (0.012)	ND (0.004)	ND (0.005)
2-Butanone	10000	400	ND (1.9)	NA	0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	ND (0.95)	NA	ND (0.007)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	3	NA	0.014 J	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	0.009 (0.005)	0.003 J (0.012)	ND (0.004)	ND (0.005)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (1.9)	NA	ND (0.014)	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.012)	ND (0.004)	ND (0.005)
1,2-Dichloroethane	85	0.5	ND (0.95)	NA	ND (0.007)	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	ND (0.012)	ND (0.004)	ND (0.005)
Ethyl Benzene	880	70	22 J	ND (0.0011)	0.0057	0.14 J	11	ND (0.0011)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	0.014 (0.012)	ND (0.004)	ND (0.005)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	ND (0.006)	ND (0.005)	0.017 (0.006)	ND (0.005)	ND (0.005)	ND (0.012)	ND (0.004)	ND (0.005)
Methylene Chloride	10000	0.5	0.9 J	NA	0.011 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	1 J	NA	ND,J (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND,J (1.1)	0.0014	0.0055	0.016 J	ND (1.1)	0.0027	0.012 (0.006)	ND (0.005)	0.003 J (0.006)	0.008 (0.005)	ND (0.005)	0.054 (0.012)	ND (0.004)	ND (0.005)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	0.014 (0.012)	ND (0.004)	ND (0.005)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	0.007 J (0.012)	ND (0.004)	ND (0.005)
Xylenes (total)	7900	1000	7.8 J	ND (0.0011)	0.0077	0.3 J	5.6	0.0014	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	0.072 (0.012)	ND (0.004)	ND (0.005)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	1	NA	0.38 J	NA	NA	NA	0.83 (0.21)	2.7 (1.9)	0.94 J (1.1)	ND (0.18)	1.9 (0.21)	0.094 J (0.26)	ND (0.18)	0.38 (0.19)
Benzo(a)anthracene	130	340	ND (1)	NA	0.53	NA	NA	NA	1.9 (0.21)	9.6 (1.9)	1.3 (1.1)	0.37 (0.18)	2.3 (0.21)	0.24 J (0.26)	ND (0.18)	1.2 (0.19)
Benzo(a)pyrene	91	46	ND (1)	NA	0.59	NA	NA	NA	2.3 (0.21)	8.4 (1.9)	1.5 (1.1)	0.38 (0.18)	1.9 (0.21)	0.2 J (0.26)	ND (0.18)	1.2 (0.19)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	3.1 (0.21)	11 (1.9)	2.2 (1.1)	0.55 (0.18)	2.2 (0.21)	0.32 (0.26)	ND (0.18)	1.4 (0.19)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	0.87 (0.21)	4.9 (1.9)	0.64 J (1.1)	0.39 (0.18)	1.3 (0.21)	0.15 J (0.26)	ND (0.18)	1 (0.19)
Benzo[b/j/k]fluoranthenes	--	--	ND (3.6)	NA	1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.72	NA	0.63	NA	NA	NA	1.8 (0.21)	8.7 (1.9)	1.6 (1.1)	0.41 (0.18)	2.3 (0.21)	0.3 (0.26)	ND (0.18)	1.3 (0.19)
Dibenz(a,h)anthracene	22	270	ND (1)	NA	ND (0.47)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (1)	NA	ND (0.47)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	ND (4.8)	NA	ND (2.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	0.64 J	NA	0.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	0.28 (0.21)	ND (1.9)	0.35 J (1.1)	ND (0.18)	1.8 (0.21)	ND (0.26)	ND (0.18)	ND (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	ND (1)	NA	0.39 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	1.5 J	NA	0.24 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	ND (1)	NA	ND (0.47)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	ND (3)	NA	ND (1.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (1)	ND (0.37)	0.63	0.52	1.7	0.31 J	4.2 (0.21)	ND (1.9)	6.5 (1.1)	0.55 (0.18)	5.4 (2.1)	0.11 J (0.26)	ND (0.18)	0.47 (0.19)
4-Nitrophenol	26000	6	ND (4.8)	NA	ND (2.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	1.5	NA	0.84	NA	NA	NA	2.6 (0.21)	7.3 (1.9)	2.9 (1.1)	0.36 (0.18)	4.4 (2.1)	0.24 J (0.26)	ND (0.18)	0.99 (0.19)
bis(2-Ethylhexyl)phthalate	6500	130	ND (1)	NA	ND (0.47)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	ND (1)	NA	ND (0.47)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	ND (1)	NA	1.1 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	3.6 (0.21)	13 (1.9)	1.9 (1.1)	0.44 (0.18)	ND (0.21)	0.36 (0.26)	0.25 (0.18)	1.9 (0.19)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	BNA-11 Tank Group 06 4.0 - 6.0 8/17/1992	BNA-12 Unassigned 0.0 - 2.0 8/14/1992	BNA-12 Unassigned 2.0 - 4.0 8/14/1992	BNA-13 Unassigned 2.0 - 4.0 8/14/1992	BNA-13 Unassigned 6.0 - 8.0 8/14/1992	BNA-14 Unassigned 0.0 - 2.0 8/14/1992	C-129 Unassigned 1.0 - 2.0 6/2/2010	C-130 Unassigned 1.0 - 2.0 6/2/2010	C-131 Unassigned 1.0 - 2.0 6/3/2010	C-136 Tank Group 06 1.0 - 2.0 5/28/2010	C-137 Unassigned 1.0 - 2.0 5/27/2010	C-138 Unassigned 1.0 - 2.0 5/27/2010	C-139 Unassigned 1.0 - 2.0 6/2/2010	C-140 Tank Group 06 1.0 - 2.0 5/26/2010
Other			ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	ND,L (1.5)	NA	ND,L (1.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	23.7 BF	5.5	22.7 BF	15.2	17.9	10.6	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	445	NA	370	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	2.4	NA	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	ND (0.76)	NA	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	91.625 J	263.96 J,L,BF	97.83 J	179.955 J,L,BF	107.95 J,L,BF	971.955 J,L,BF	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	ND (0.15)	ND,L (0.08)	ND (0.14)	ND,L (0.09)	ND,L (0.1)	ND,L (0.09)	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	24.7	NA	17.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	1.9	0.35	2.4	1	2.5	2.2	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	576	88.7	421	388	1140	228	252 (1.26)	814 (4.67)	396 (1.29)	218 (1.09)	251 (0.617)	103 (0.308)	98.7 (0.212)	98.6 (0.557)
Mercury	510	10	25.2 J	NA	2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	58.1	NA	40.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	1.7	NA	2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	41	NA	39.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	C-142 Unassigned 1.0 - 2.0 6/3/2010	C-143 Unassigned 1.0 - 2.0 6/3/2010	C-165 Unassigned 1.5 - 2.0 12/5/2012	C-168 Tank Group 06 1.5 - 2.0 12/5/2012	C-169 Unassigned 1.5 - 2.0 12/5/2012	C-170 Tank Group 06 0.0 - 2.0 7/7/2016	C-170 Tank Group 06 2.0 - 4.0 7/7/2016	C-171 Unassigned 0.0 - 2.0 7/5/2016	C-171 Unassigned 2.0 - 4.0 7/5/2016	C-172 Unassigned 0.0 - 2.0 7/6/2016	C-172 Unassigned 2.0 - 4.0 7/6/2016	GP 1002-1002 PIPE-1 Unassigned -- 4/7/2006	GP 1002-1002 PIPE-2 Unassigned -- 4/7/2006	GP 1002-1002-1 Unassigned -- 4/7/2006
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.1 J (0.31)	2 (0.33)	ND (0.25)	ND (0.0013)	ND (0.0016)	0.09 J (0.38)	ND (0.008)	0.15 J (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	ND (0.52)	0.16 (0.025)	ND (0.58)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	0.078 J (0.31)	5.6 (0.33)	0.918 J (1.2)	ND (0.0064)	ND (0.008)	0.91 (0.38)	ND (0.008)	ND (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	ND (1.3)	0.064 J (0.063)	5.8 (0.3)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.31)	ND (0.33)	ND (0.25)	ND (0.0013)	ND (0.0016)	ND (0.38)	ND (0.008)	ND (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.31)	ND (0.33)	ND (0.25)	ND (0.0013)	ND (0.0016)	ND (0.38)	ND (0.008)	ND (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	NA	NA	NA
Ethyl Benzene	880	70	0.072 J (0.31)	0.15 J (0.33)	ND (0.25)	ND (0.0013)	ND (0.0016)	0.16 J (0.38)	ND (0.008)	0.09 J (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	ND (0.52)	0.047 J (0.025)	0.63 (0.12)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.31)	ND (0.33)	ND (0.25)	ND (0.0013)	ND (0.0016)	ND (0.38)	ND (0.008)	ND (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.63 (0.31)	0.22 J (0.33)	0.347 (0.25)	ND (0.0013)	0.00052 J (0.0016)	0.41 (0.38)	0.003 J (0.008)	0.39 (0.33)	0.003 J (0.007)	ND (0.006)	ND (0.003)	ND (0.52)	0.12 (0.025)	0.6 (0.12)
1,2,4-Trimethylbenzene	4700	300	0.18 J (0.31)	0.25 J (0.33)	0.147 J (1.2)	ND (0.0064)	ND (0.008)	1.5 (0.38)	0.003 J (0.008)	0.11 J (0.33)	0.003 J (0.007)	ND (0.006)	ND (0.003)	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.09 J (0.31)	0.24 J (0.33)	ND (1.2)	ND (0.0064)	ND (0.008)	0.27 J (0.38)	ND (0.008)	ND (0.33)	ND (0.007)	ND (0.006)	ND (0.003)	NA	NA	NA
Xylenes (total)	7900	1000	0.22 J (0.31)	0.57 (0.33)	0.445 (0.25)	ND (0.0013)	ND (0.0016)	0.83 (0.38)	0.002 J (0.008)	0.49 (0.33)	0.005 J (0.007)	ND (0.006)	ND (0.003)	ND (1.3)	0.27 (0.063)	2.2 (0.3)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	2 (0.94)	0.17 J (0.18)	2.64 (0.26)	0.206 (0.038)	0.0691 (0.045)	2.2 (2.1)	0.94 J (1.3)	2.9 (1.1)	2.5 (1.3)	0.91 (0.1)	2.5 (0.11)	ND (0.014)	0.076 J (0.015)	9.1 (0.17)
Benzo(a)anthracene	130	340	3.1 (0.94)	0.42 (0.18)	0.79 (0.26)	0.24 (0.038)	0.0673 (0.045)	2.1 J (2.1)	1.4 (1.3)	4.8 (1.1)	4.4 (1.3)	2 (0.1)	3.7 (0.11)	0.17 (0.032)	0.31 (0.033)	6.1 (0.39)
Benzo(a)pyrene	91	46	3.4 (0.94)	0.52 (0.18)	0.576 (0.26)	0.223 (0.038)	0.0624 (0.045)	2.1 J (2.1)	1.9 (1.3)	3.9 (1.1)	4.3 (1.3)	2 (0.1)	4 (0.11)	1.2 (0.048)	1.2 (0.05)	5.8 (0.58)
Benzo(b)fluoranthene	76	170	4.8 (0.94)	0.62 (0.18)	0.445 (0.26)	0.206 (0.038)	0.067 (0.045)	2.7 (2.1)	2.4 (1.3)	7 (1.1)	4.8 (1.3)	2.6 (0.1)	4.5 (0.11)	0.83 (0.064)	1 (0.067)	4.8 (0.77)
Benzo(g,h,i)perylene	190000	180	1.3 (0.94)	0.43 (0.18)	0.912 (0.26)	0.612 (0.038)	0.0751 (0.045)	2.4 (2.1)	2 (1.3)	2.7 (1.1)	4.6 (1.3)	1.5 (0.1)	2.7 (0.11)	13 (0.064)	5.7 (0.067)	6 (0.77)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	2.9 (0.94)	0.6 (0.18)	1.05 (0.26)	0.276 (0.038)	0.0565 (0.045)	3.6 (2.1)	1.6 (1.3)	5.1 (1.1)	3.8 (1.3)	1.9 (0.1)	3.6 (0.11)	0.65 (0.048)	0.33 J (0.05)	11 (0.58)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	1.6 (0.94)	0.062 J (0.18)	7.93 (0.26)	ND (0.038)	ND (0.045)	ND (2.1)	0.49 J (1.3)	1.8 (1.1)	1.1 J (1.3)	0.47 (0.1)	2 (0.11)	2 (0.096)	0.47 J (0.1)	22 (1.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	2 (0.94)	0.27 (0.18)	ND (0.26)	0.0225 J (0.038)	ND (0.045)	6.2 (2.1)	9.7 (1.3)	5 (1.1)	15 (1.3)	3.1 (0.1)	7.3 (0.11)	4 J (2.6)	2.5 (0.13)	14 (0.59)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	7.1 (0.94)	0.49 (0.18)	10.6 (0.26)	0.165 (0.038)	0.0423 J (0.045)	6.3 (2.1)	2.8 (1.3)	6.6 (1.1)	4.8 (1.3)	2.7 (0.1)	7.5 (0.11)	0.16 J (0.048)	0.85 (0.05)	41 (0.58)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	5.9 (0.94)	0.93 (0.18)	2.05 (0.26)	0.284 (0.038)	0.0751 (0.045)	5.4 (2.1)	1.9 (1.3)	8.5 (1.1)	5.2 (1.3)	2.8 (0.1)	6.1 (0.11)	0.53 J (0.11)	1.3 (0.12)	14 (1.4)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	C-142 Unassigned 1.0 - 2.0 6/3/2010	C-143 Unassigned 1.0 - 2.0 6/3/2010	C-165 Unassigned 1.5 - 2.0 12/5/2012	C-168 Tank Group 06 1.5 - 2.0 12/5/2012	C-169 Unassigned 1.5 - 2.0 12/5/2012	C-170 Tank Group 06 0.0 - 2.0 7/7/2016	C-170 Tank Group 06 2.0 - 4.0 7/7/2016	C-171 Unassigned 0.0 - 2.0 7/5/2016	C-171 Unassigned 2.0 - 4.0 7/5/2016	C-172 Unassigned 0.0 - 2.0 7/6/2016	C-172 Unassigned 2.0 - 4.0 7/6/2016	GP 1002-1002 PIPE-1 Unassigned -- 4/7/2006	GP 1002-1002 PIPE-2 Unassigned -- 4/7/2006	GP 1002-1002-1 Unassigned -- 4/7/2006
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	1370 (4.44)	164 (1.03)	286 (2.9)	273 (2.6)	127 (3)	793 (1.72)	343 (2.15)	324 (1.9)	200 (2.27)	198 (1.5)	151 (1.86)	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP 1002-1002-2 Unassigned -- 4/7/2006	GP 1002-1002-3 Unassigned -- 4/7/2006	GP 1100-1100-1 Tank Group 06 -- 5/11/2006	GP 1100-1100-2 Tank Group 06 -- 5/11/2006	GP 1100-1100-3 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-1 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-1 Tank Group 06 -- 6/19/2006	GP 1100-1100-CV-2 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-3 Tank Group 06 -- 5/11/2006	GP 1100-1100-ELBOW Tank Group 06 -- 5/11/2006	GP 1100-1100-JOINTS Tank Group 06 -- 5/11/2006	GP 797-HA-1 Tank Group 07 1.0 - 1.5 8/29/2002	GP 797-HA-2 Tank Group 07 1.0 - 1.5 5/24/2002	GP 797-HA-3 Tank Group 07 1.0 - 1.5 5/24/2002
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	1.4 (0.12)	ND (0.041)	1 (0.017)	0.097 J (0.017)	0.25 (0.021)	0.017 J (0.015)	NA	ND (0.016)	ND (0.015)	0.16 J (0.017)	0.33 (0.019)	920 D (0.24)	28 D (0.26)	310 D (0.27)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	12 (0.31)	6.2 (0.13)	0.18 (0.035)	0.09 J (0.034)	0.076 J (0.042)	ND (0.03)	NA	ND (0.031)	ND (0.03)	ND (0.033)	2.6 (0.038)	1600 D (0.24)	17 D (0.26)	1000 D (0.27)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	1.9 (0.12)	0.56 (0.052)	0.59 (0.035)	0.28 (0.034)	0.33 (0.042)	ND (0.03)	NA	ND (0.031)	ND (0.03)	ND (0.033)	1.3 (0.038)	80 J,D (0.24)	0.85 (0.26)	37 J,D (0.27)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.24)	ND (0.26)	ND (0.27)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	1.2 (0.12)	0.23 (0.052)	ND (0.035)	ND (0.034)	ND (0.042)	ND (0.03)	NA	ND (0.031)	ND (0.03)	0.25 (0.033)	5.6 (0.038)	1800 D (0.24)	11 D (0.26)	920 D (0.27)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	6.8 (0.31)	1.9 (0.13)	0.042 J (0.035)	0.13 J (0.034)	0.11 J (0.042)	ND (0.03)	NA	0.18 (0.031)	0.031 J (0.03)	0.12 J (0.033)	86 (0.38)	381 J (0.24)	5.9 J (0.26)	169 J (0.27)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	5.5 (0.18)	8.9 (0.16)	82 (5.3)	21 (0.26)	32 (0.55)	NA	5.6 (0.2)	41 (0.42)	0.84 J (0.41)	1.6 J (0.43)	7.4 (0.44)	NA	NA	NA
Benzo(a)anthracene	130	340	3 (0.39)	5.4 (0.36)	16 (0.53)	3.8 (0.26)	8.2 (0.55)	NA	10 (0.2)	26 (0.42)	0.63 J (0.41)	0.89 J (0.43)	5 (0.44)	NA	NA	NA
Benzo(a)pyrene	91	46	2.8 J (0.59)	4.9 (0.54)	9.7 (0.53)	2.6 (0.26)	3.8 (0.55)	NA	6.8 (0.2)	13 (0.42)	0.79 J (0.41)	1.2 J (0.43)	2.3 (0.44)	NA	NA	NA
Benzo(b)fluoranthene	76	170	2.5 J (0.79)	5.5 (0.72)	9.3 (0.53)	2.6 (0.26)	4 (0.55)	NA	7.9 (0.2)	8.5 (0.42)	0.81 J (0.41)	0.87 J (0.43)	1.8 J (0.44)	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	5.5 (0.72)	4.2 (0.53)	1.9 (0.26)	2.4 J (0.55)	NA	3.8 (0.2)	6.2 (0.42)	3.4 (0.41)	1.8 J (0.43)	3.3 (0.44)	NA	NA	NA
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	6.6 (0.59)	11 (0.54)	29 (0.53)	7.1 (0.26)	22 (0.55)	NA	16 (0.2)	41 (0.42)	2.3 (0.41)	3 (0.43)	8.2 (0.44)	NA	NA	NA
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	20 (1.2)	20 (1.1)	210 (5.3)	64 (2.6)	160 (5.5)	NA	11 (0.2)	59 (2.1)	ND (0.41)	1.1 (0.43)	16 (0.44)	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	3.2 (0.53)	1.5 (0.26)	1.8 J (0.55)	NA	2.7 (0.2)	4 (0.42)	1.5 J (0.41)	1.2 J (0.43)	1.6 J (0.44)	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	30 (0.62)	4.5 (0.26)	0.099 J (0.035)	0.35 (0.034)	1.2 (0.042)	0.18 (0.03)	NA	0.18 (0.031)	0.054 J (0.03)	0.048 J (0.033)	5.6 (0.038)	0.65 (0.24)	ND (0.26)	0.41 (0.27)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	26 (0.59)	36 (0.54)	620 (5.3)	180 (2.6)	440 (5.5)	NA	22 (0.2)	160 (2.1)	0.63 J (0.41)	2.6 (0.43)	31 (0.44)	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	34 (1.4)	16 (1.3)	60 (0.53)	17 (0.26)	41 (0.55)	NA	31 (0.41)	78 (2.1)	1 J (0.41)	2.9 (0.43)	13 (0.44)	NA	NA	NA
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP 1002-1002-2 Unassigned -- 4/7/2006	GP 1002-1002-3 Unassigned -- 4/7/2006	GP 1100-1100-1 Tank Group 06 -- 5/11/2006	GP 1100-1100-2 Tank Group 06 -- 5/11/2006	GP 1100-1100-3 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-1 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-1 Tank Group 06 -- 6/19/2006	GP 1100-1100-CV-2 Tank Group 06 -- 5/11/2006	GP 1100-1100-CV-3 Tank Group 06 -- 5/11/2006	GP 1100-1100-ELBOW Tank Group 06 -- 5/11/2006	GP 1100-1100-JOINTS Tank Group 06 -- 5/11/2006	GP 797-HA-1 Tank Group 07 1.0 - 1.5 8/29/2002	GP 797-HA-2 Tank Group 07 1.0 - 1.5 5/24/2002	GP 797-HA-3 Tank Group 07 1.0 - 1.5 5/24/2002
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP 797-HA-3 Tank Group 07 1.5 - 2.0 5/24/2002	GP 797-HA-4 Tank Group 07 1.0 - 1.5 5/24/2002	GP U 677-1 Tank Group 07 1.5 - 2.0 6/8/2011	GP U 677-2 Tank Group 07 0.8 - 1.3 6/8/2011	GP U 677-3 Tank Group 07 1.5 - 2.0 6/8/2011	GP U 677-4 Tank Group 07 0.3 - 0.8 6/8/2011	GP U 677-5 Tank Group 07 0.8 - 1.3 6/8/2011	GP-1002-1002 Unassigned -- 5/11/2006	GP-270-S-1 Tank Group 06 4.0 - 4.5 9/21/2009	GP-270-S-10 Tank Group 06 2.0 - 2.5 10/6/2009	GP-270-S-11 Tank Group 06 1.5 - 2.0 10/6/2009	GP-270-S-12 Tank Group 06 2.0 - 2.5 10/6/2009	GP-270-S-13 Tank Group 06 1.0 - 1.5 10/6/2009	GP-270-S-14 Tank Group 06 1.0 - 1.5 10/6/2009
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	170 D (0.25)	190 D (0.25)	0.06 J (0.035)	ND (0.0006)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.017)	ND (0.029)	ND (0.051)	0.12 J (0.032)	0.061 J (0.049)	ND (0.058)	ND (0.057)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	230 D (0.25)	950 D (0.25)	0.7 (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.52 (0.034)	ND (0.059)	ND (0.1)	ND (0.064)	ND (0.097)	ND (0.12)	ND (0.11)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	0.13 J (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	ND (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	8.5 (0.25)	55 D (0.25)	0.11 J (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.034)	ND (0.059)	0.12 J (0.1)	ND (0.064)	ND (0.097)	ND (0.12)	ND (0.11)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.25)	ND (0.25)	ND (0.035)	ND (0.0006)	ND (0.0005)	ND (0.0005)	ND (0.0005)	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	300 D (0.25)	660 D (0.25)	0.12 J (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 J (0.001)	ND (0.034)	ND (0.059)	0.7 (0.1)	0.4 (0.064)	0.94 (0.097)	0.4 J (0.12)	0.28 J (0.11)
1,2,4-Trimethylbenzene	4700	300	NA	NA	0.097 J (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	0.056 (0.001)	NA	ND (0.059)	ND (0.1)	ND (0.064)	0.12 J (0.097)	ND (0.12)	0.13 J (0.11)
1,3,5-Trimethylbenzene	4700	93	NA	NA	ND (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	0.046 (0.001)	NA	ND (0.059)	ND (0.1)	ND (0.064)	ND (0.097)	ND (0.12)	ND (0.11)
Xylenes (total)	7900	1000	36.7 J (0.25)	260 J (0.25)	0.42 (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	0.005 (0.001)	ND (0.034)	ND (0.059)	0.25 J (0.1)	0.083 J (0.064)	0.19 J (0.097)	0.14 J (0.12)	0.19 J (0.11)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	NA	NA	0.78 (0.017)	0.037 J (0.017)	0.5 (0.017)	ND (0.028)	0.99 (0.036)	4.8 (0.21)	0.43 (0.048)	2 J (0.49)	0.89 J (0.39)	0.78 J (0.48)	1.1 J (0.52)	1.1 J (0.5)
Benzo(a)anthracene	130	340	NA	NA	1 (0.0084)	0.11 (0.0085)	1.2 (0.0086)	0.031 (0.0071)	ND (0.59)	2.9 (0.21)	1.4 (0.048)	2.1 J (0.49)	1.6 J (0.39)	1 J (0.48)	1.8 J (0.52)	1.9 J (0.5)
Benzo(a)pyrene	91	46	NA	NA	1.2 (0.0084)	0.12 (0.0085)	1.2 (0.0086)	0.05 (0.0071)	0.62 (0.018)	2.3 (0.21)	1.7 (0.048)	3.6 (0.49)	1.6 J (0.39)	1 J (0.48)	2.4 J (0.52)	2.5 J (0.5)
Benzo(b)fluoranthene	76	170	NA	NA	0.8 (0.0067)	0.091 (0.0068)	0.85 (0.0069)	0.053 (0.0057)	0.81 (0.014)	2.6 (0.21)	2.2 (0.048)	3.5 (0.49)	2 (0.39)	1.4 J (0.48)	2.8 (0.52)	3 (0.5)
Benzo(g,h,i)perylene	190000	180	NA	NA	1.7 (0.051)	0.19 J (0.051)	1.5 (0.051)	0.13 J (0.043)	1.4 (0.11)	1.6 (0.21)	1.4 (0.048)	4.5 (0.49)	1.1 J (0.39)	0.76 J (0.48)	1.9 J (0.52)	2.3 J (0.5)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	2 (0.076)	0.16 (0.076)	1.6 (0.077)	0.25 (0.064)	4.3 (0.16)	3.6 (0.21)	1.4 (0.048)	2.6 (0.49)	1.9 J (0.39)	1.1 J (0.48)	1.9 J (0.52)	1.9 J (0.5)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	1.3 (0.084)	ND (0.085)	0.39 (0.086)	ND (0.071)	2.5 (0.18)	6.3 (0.21)	0.21 J (0.048)	0.96 J (0.49)	0.65 J (0.39)	0.62 J (0.48)	ND (0.52)	ND (0.5)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	1.2 (0.048)	3.5 (0.49)	0.96 J (0.39)	0.62 J (0.48)	1.6 J (0.52)	1.9 J (0.5)
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.3 (0.25)	0.29 (0.25)	0.29 J (0.07)	ND (0.001)	ND (0.001)	ND (0.001)	0.16 (0.001)	0.043 J (0.034)	0.18 J (0.059)	0.87 (0.1)	0.29 J (0.064)	0.85 (0.097)	0.67 (0.12)	0.8 (0.11)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	2.2 (0.051)	0.09 J (0.051)	1.6 (0.051)	0.095 J (0.043)	5.2 (0.11)	13 (0.21)	1.1 (0.048)	3.1 (0.49)	1.7 J (0.39)	2.1 J (0.48)	3 (0.52)	2.5 J (0.5)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	1.5 (0.084)	0.24 J (0.085)	2.3 (0.086)	ND (0.37)	ND (17)	7.3 (0.21)	1.9 (0.048)	2.7 (0.49)	3.5 (0.39)	1.9 J (0.48)	2 J (0.52)	2.3 J (0.5)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP 797-HA-3 Tank Group 07 1.5 - 2.0 5/24/2002	GP 797-HA-4 Tank Group 07 1.0 - 1.5 5/24/2002	GP U 677-1 Tank Group 07 1.5 - 2.0 6/8/2011	GP U 677-2 Tank Group 07 0.8 - 1.3 6/8/2011	GP U 677-3 Tank Group 07 1.5 - 2.0 6/8/2011	GP U 677-4 Tank Group 07 0.3 - 0.8 6/8/2011	GP U 677-5 Tank Group 07 0.8 - 1.3 6/8/2011	GP-1002-1002 Unassigned -- 5/11/2006	GP-270-S-1 Tank Group 06 4.0 - 4.5 9/21/2009	GP-270-S-10 Tank Group 06 2.0 - 2.5 10/6/2009	GP-270-S-11 Tank Group 06 1.5 - 2.0 10/6/2009	GP-270-S-12 Tank Group 06 2.0 - 2.5 10/6/2009	GP-270-S-13 Tank Group 06 1.0 - 1.5 10/6/2009	GP-270-S-14 Tank Group 06 1.0 - 1.5 10/6/2009
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	453 (0.268)	67 (0.276)	451 (0.272)	47.8 (0.232)	18.5 (0.232)	NA	73.1 (0.858)	447 (0.871)	99.9 (0.685)	235 (0.866)	330 (0.891)	366 (0.871)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-270-S-15 Tank Group 06 1.5 - 2.0 10/6/2009	GP-270-S-2 Tank Group 06 4.0 - 4.5 9/21/2009	GP-270-S-3 Tank Group 06 3.0 - 3.5 9/21/2009	GP-270-S-4 Tank Group 06 4.0 - 4.5 9/22/2009	GP-270-S-5 Tank Group 06 4.0 - 4.5 9/22/2009	GP-270-S-6 Tank Group 06 1.5 - 2.0 9/29/2009	GP-270-S-7 Tank Group 06 2.5 - 3.0 9/29/2009	GP-270-S-8 Tank Group 06 2.0 - 2.5 9/29/2009	GP-270-S-9 Tank Group 06 2.5 - 3.0 10/6/2009	GP-271-GP-1 Tank Group 06 0.0 - 0.5 6/4/2002	GP-271-GP-2 Tank Group 06 0.5 - 1.0 6/4/2002	GP-271-GP-2 Tank Group 06 8.5 - 9.0 6/4/2002	GP-271-GP-3 Tank Group 06 1.5 - 2.0 6/4/2002	GP-271-GP-4 Tank Group 06 1.5 - 2.0 6/4/2002
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	0.11 J (0.055)	ND (0.025)	ND (0.041)	ND (0.035)	ND (0.031)	ND (0.053)	ND (0.044)	ND (0.044)	ND (0.057)	ND (0.27)	ND (0.22)	ND (0.41)	0.15 J (0.37)	2.2 (0.47)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.11)	ND (0.051)	ND (0.082)	ND (0.07)	ND (0.061)	ND (0.11)	0.1 J (0.088)	ND (0.088)	ND (0.11)	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	0.19 J (0.11)	ND (0.051)	ND (0.082)	ND (0.07)	ND (0.061)	ND (0.11)	ND (0.088)	ND (0.088)	ND (0.11)	NA	NA	NA	NA	NA
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.63 (0.11)	ND (0.051)	0.41 J (0.082)	ND (0.07)	0.071 J (0.061)	0.36 J (0.11)	0.28 J (0.088)	0.44 J (0.088)	0.99 (0.11)	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	0.16 J (0.11)	ND (0.051)	ND (0.082)	ND (0.07)	ND (0.061)	ND (0.11)	ND (0.088)	ND (0.088)	0.12 J (0.11)	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.11)	ND (0.051)	ND (0.082)	ND (0.07)	ND (0.061)	ND (0.11)	ND (0.088)	ND (0.088)	ND (0.11)	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	0.64 (0.11)	ND (0.051)	ND (0.082)	ND (0.07)	ND (0.061)	ND (0.11)	ND (0.088)	0.18 J (0.088)	0.17 J (0.11)	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	4.4 (0.52)	0.11 J (0.045)	4.7 (0.1)	0.23 J (0.048)	0.095 J (0.045)	7.5 (0.6)	4.1 (0.54)	2.1 J (0.53)	2.5 J (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Benzo(a)anthracene	130	340	5.8 (0.52)	0.32 (0.045)	6.4 (0.1)	0.52 (0.048)	0.23 (0.045)	8.8 (0.6)	4.9 (0.54)	2.2 J (0.53)	3.5 (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Benzo(a)pyrene	91	46	6.5 (0.52)	0.36 (0.045)	5.1 (0.1)	0.59 (0.048)	0.26 (0.045)	7.1 (0.6)	3.5 (0.54)	2.2 J (0.53)	2.9 (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Benzo(b)fluoranthene	76	170	7.5 (0.52)	0.41 (0.045)	7 (0.1)	0.69 (0.048)	0.34 (0.045)	8.6 (0.6)	3.9 (0.54)	2.5 J (0.53)	3.1 (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Benzo(g,h,i)perylene	190000	180	4.6 (0.52)	0.29 (0.045)	3.4 (0.1)	0.47 (0.048)	0.23 (0.045)	3.7 (0.6)	1.6 J (0.54)	1.5 J (0.53)	1.7 J (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	7.3 (0.52)	0.34 (0.045)	7.1 (0.1)	0.61 (0.048)	0.26 (0.045)	11 (0.6)	5.6 (0.54)	2.6 J (0.53)	3.7 (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	ND (0.65)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	3.2 (0.52)	0.062 J (0.045)	4.1 (0.1)	0.16 J (0.048)	0.047 J (0.045)	7.3 (0.6)	4.3 (0.54)	1.7 J (0.53)	2.2 J (0.52)	ND (0.37)	ND (0.37)	ND (0.58)	ND (0.53)	0.75 (0.65)
Indeno(1,2,3-cd)pyrene	76	18000	3.6 (0.52)	0.25 (0.045)	2.8 (0.1)	0.41 (0.048)	0.21 J (0.045)	3.1 (0.6)	1.4 J (0.54)	1.1 J (0.53)	1.3 J (0.52)	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.43 J (0.11)	ND (0.051)	0.41 J (0.082)	ND (0.07)	0.13 J (0.061)	0.41 J (0.11)	0.39 J (0.088)	0.71 (0.088)	0.66 (0.11)	ND (0.27)	ND (0.22)	0.92 (0.41)	1.2 (0.37)	1.5 (0.47)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	4.9 (0.52)	0.27 (0.045)	11 (0.1)	1.1 (0.048)	0.21 J (0.045)	17 (0.6)	18 (0.54)	5.5 (0.53)	8.9 (0.52)	ND (0.37)	ND (0.37)	0.6 (0.58)	0.29 J (0.53)	0.84 (0.65)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	15 (0.52)	0.44 (0.045)	15 (0.51)	0.93 (0.048)	0.33 (0.045)	23 (0.6)	13 (0.54)	5.2 (0.53)	8.5 (0.52)	ND (0.37)	ND (0.37)	0.57 J (0.58)	ND (0.53)	ND (0.65)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-270-S-15 Tank Group 06 1.5 - 2.0 10/6/2009	GP-270-S-2 Tank Group 06 4.0 - 4.5 9/21/2009	GP-270-S-3 Tank Group 06 3.0 - 3.5 9/21/2009	GP-270-S-4 Tank Group 06 4.0 - 4.5 9/22/2009	GP-270-S-5 Tank Group 06 4.0 - 4.5 9/22/2009	GP-270-S-6 Tank Group 06 1.5 - 2.0 9/29/2009	GP-270-S-7 Tank Group 06 2.5 - 3.0 9/29/2009	GP-270-S-8 Tank Group 06 2.0 - 2.5 9/29/2009	GP-270-S-9 Tank Group 06 2.5 - 3.0 10/6/2009	GP-271-GP-1 Tank Group 06 0.0 - 0.5 6/4/2002	GP-271-GP-2 Tank Group 06 0.5 - 1.0 6/4/2002	GP-271-GP-2 Tank Group 06 8.5 - 9.0 6/4/2002	GP-271-GP-3 Tank Group 06 1.5 - 2.0 6/4/2002	GP-271-GP-4 Tank Group 06 1.5 - 2.0 6/4/2002
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	386 (0.886)	47.1 (0.815)	264 (0.892)	20.7 (0.861)	28.9 (0.802)	450 (1.07)	387 (0.943)	443 (0.935)	328 (0.939)	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-271-GP-4 Tank Group 06 3.5 - 4.0 6/4/2002	GP-271-GP-5 Tank Group 06 1.5 - 2.0 6/4/2002	GP-271-GP-5 Tank Group 06 3.5 - 4.0 9/17/2002	GP-271-GP-5 Tank Group 06 3.5 - 4.0 9/17/2002	GP-271-GP-6 Tank Group 06 0.0 - 0.5 6/4/2002	GP-275-LINE1 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE2 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE3 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE4 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-PER1 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER2 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER3 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER4 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER5 Tank Group 06 3.0 - 3.5 5/24/2007
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.35)	1.2 (0.54)	ND (0.39)	ND (0.39)	0.076 J (0.27)	ND,D (0.24)	ND,D (0.21)	ND,D (0.23)	ND,D (0.16)	ND,D (0.27)	ND,D (0.27)	ND,D (0.23)	ND,D (0.23)	ND,D (0.2)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	ND,D (0.24)	ND,D (0.21)	ND,D (0.23)	ND,D (0.16)	ND,D (0.27)	ND,D (0.27)	ND,D (0.23)	ND,D (0.23)	ND,D (0.2)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	ND,D (0.24)	ND,D (0.21)	ND,D (0.23)	ND,D (0.16)	ND,D (0.27)	ND,D (0.27)	ND,D (0.23)	ND,D (0.23)	ND,D (0.2)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	NA	ND,D (0.24)	ND,D (0.21)	ND,D (0.23)	ND,D (0.16)	0.59 D (0.27)	0.71 D (0.27)	0.49 D (0.23)	0.5 D (0.23)	0.38 D (0.2)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.39 J (0.56)	ND (16)	NA	NA	ND (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.58)	ND (0.56)	ND (0.55)	ND (0.51)	ND (0.5)
Benzo(a)anthracene	130	340	0.44 J (0.56)	ND (16)	NA	NA	0.25 J (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	1.8 (0.58)	0.38 J (0.56)	0.81 (0.55)	1.1 (0.51)	1 (0.5)
Benzo(a)pyrene	91	46	0.41 J (0.56)	ND (16)	NA	NA	0.33 J (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	2 (0.58)	0.4 J (0.56)	0.99 (0.55)	1.7 (0.51)	1.4 (0.5)
Benzo(b)fluoranthene	76	170	0.46 J (0.56)	ND (16)	NA	NA	0.44 (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	2.5 (0.58)	0.56 (0.56)	1.3 (0.55)	2.6 (0.51)	1.5 (0.5)
Benzo(g,h,i)perylene	190000	180	ND (0.56)	ND (16)	NA	NA	ND (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	1.1 (0.58)	ND (0.56)	0.39 J (0.55)	0.57 (0.51)	0.83 (0.5)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.58 (0.56)	ND (16)	NA	NA	0.41 J (0.44)	0.23 J (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	2 (0.58)	0.7 (0.56)	0.89 (0.55)	1.2 (0.51)	1.2 (0.5)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.4 J (0.56)	120 (16)	NA	NA	ND (0.44)	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.58)	ND (0.56)	ND (0.55)	ND (0.51)	ND (0.5)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	ND (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	1.1 (0.58)	ND (0.56)	0.36 J (0.55)	0.54 (0.51)	0.7 (0.5)
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.72 (0.35)	ND (0.54)	NA	NA	0.19 J (0.27)	0.23 J,D (0.24)	ND,D (0.21)	ND,D (0.23)	ND,D (0.16)	0.43 D (0.27)	0.6 D (0.27)	0.35 D (0.23)	0.37 D (0.23)	0.2 J,D (0.2)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	1.5 (0.56)	110 (16)	NA	NA	0.39 J (0.44)	0.56 (0.34)	0.21 J (0.36)	ND (0.37)	ND (0.35)	2.2 (0.58)	0.59 (0.56)	0.83 (0.55)	0.85 (0.51)	0.64 (0.5)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	1.4 (0.56)	11 J (16)	NA	NA	0.44 (0.44)	0.33 J (0.34)	ND (0.36)	ND (0.37)	ND (0.35)	2.9 (0.58)	1 (0.56)	1.8 (0.55)	1.4 (0.51)	1.4 (0.5)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-271-GP-4 Tank Group 06 3.5 - 4.0 6/4/2002	GP-271-GP-5 Tank Group 06 1.5 - 2.0 6/4/2002	GP-271-GP-5 Tank Group 06 3.5 - 4.0 9/17/2002	GP-271-GP-5 Tank Group 06 3.5 - 4.0 9/17/2002	GP-271-GP-6 Tank Group 06 0.0 - 0.5 6/4/2002	GP-275-LINE1 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE2 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE3 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-LINE4 Tank Group 06 0.0 - 0.5 5/25/2007	GP-275-PER1 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER2 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER3 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER4 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-PER5 Tank Group 06 3.0 - 3.5 5/24/2007
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-275-PER6 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-SUB-1 Tank Group 06 5.0 - 5.5 9/4/2007	GP-275-SUB-2 Tank Group 06 5.0 - 5.5 9/4/2007	GP-275-SUB-3 Tank Group 06 5.0 - 5.5 9/4/2007	GP-277-LINE1 Unassigned 0.0 - 0.5 5/25/2007	GP-277-LINE2 Unassigned 0.0 - 0.5 5/25/2007	GP-277-LINE3 Unassigned 0.0 - 0.5 5/25/2007	GP-277-PER1 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER2 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER3 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER4 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER5 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER6 Unassigned 3.0 - 3.5 5/24/2007	GP-277-SUB1 Unassigned 5.0 - 5.5 5/24/2007
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND,D (0.34)	ND (0.0058)	ND (0.0054)	ND (0.0051)	2.3 D (0.23)	ND,D (0.14)	ND,D (0.16)	1.1 D (0.16)	2.8 D (0.17)	3.3 D (0.24)	3 D (0.24)	8.6 D (0.23)	3.8 D (0.26)	0.79 D (0.25)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND,D (0.34)	ND (0.0058)	ND (0.0054)	ND (0.0051)	0.12 J,D (0.23)	ND,D (0.14)	ND,D (0.16)	1.7 D (0.16)	2.4 D (0.17)	2.7 D (0.24)	4.3 D (0.24)	2.5 D (0.23)	7.2 D (0.26)	0.9 D (0.25)
Cyclohexane	10000	6900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND,D (0.34)	ND (0.0058)	ND (0.0054)	ND (0.0051)	0.68 D (0.23)	ND,D (0.14)	ND,D (0.16)	1.2 D (0.16)	1.9 D (0.17)	1.8 D (0.24)	4.1 D (0.24)	1.1 D (0.23)	12 D (0.26)	0.25 D (0.25)
Hexane	10000	5300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND,D (0.34)	ND (0.0058)	ND (0.0054)	ND (0.0051)	1.7 D (0.23)	0.098 J,D (0.14)	ND,D (0.16)	1.4 D (0.16)	2.6 D (0.17)	2.7 D (0.24)	4 D (0.24)	3.1 D (0.23)	4.3 D (0.26)	0.37 D (0.25)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	ND (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	ND (0.36)	ND (0.36)	ND (0.38)	ND (0.4)	ND (0.38)	ND (0.55)	2.7 (0.54)	ND,D (5.3)	ND,D (5.6)	ND,D (5.5)
Benzo(a)anthracene	130	340	0.46 J (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.73 D (0.72)	ND (0.36)	ND (0.38)	0.32 J (0.4)	ND (0.38)	0.33 J (0.55)	ND (0.54)	ND,D (5.3)	ND,D (5.6)	ND,D (5.5)
Benzo(a)pyrene	91	46	0.59 (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.76 D (0.72)	ND (0.36)	ND (0.38)	0.31 J (0.4)	ND (0.38)	0.35 J (0.55)	ND (0.54)	ND,D (5.3)	3.9 J,D (5.6)	ND,D (5.5)
Benzo(b)fluoranthene	76	170	0.6 (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.83 D (0.72)	ND (0.36)	0.26 J (0.38)	0.42 (0.4)	ND (0.38)	0.49 J (0.55)	0.48 J (0.54)	ND,D (5.3)	3.5 J,D (5.6)	ND,D (5.5)
Benzo(g,h,i)perylene	190000	180	ND (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.63 J,D (0.72)	ND (0.36)	ND (0.38)	ND (0.4)	ND (0.38)	ND (0.55)	ND (0.54)	ND,D (5.3)	4.4 J,D (5.6)	ND,D (5.5)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.51 (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	1.7 D (0.72)	ND (0.36)	ND (0.38)	0.41 (0.4)	ND (0.38)	0.37 J (0.55)	0.44 J (0.54)	5.5 D (5.3)	ND,D (5.6)	ND,D (5.5)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	ND (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	ND,D (0.72)	ND (0.36)	ND (0.38)	ND (0.4)	ND (0.38)	ND (0.55)	1.1 (0.54)	3.7 J,D (5.3)	ND,D (5.6)	ND,D (5.5)
Indeno(1,2,3-cd)pyrene	76	18000	0.43 J (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.46 J,D (0.72)	ND (0.36)	ND (0.38)	ND (0.4)	ND (0.38)	ND (0.55)	ND (0.54)	ND,D (5.3)	3.1 J,D (5.6)	ND,D (5.5)
2-Methylnaphthalene	240	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND,D (0.34)	0.0022 J (0.0058)	0.002 J (0.0054)	0.0023 J (0.0051)	0.58 D (0.23)	0.13 J,D (0.14)	0.13 J,D (0.16)	1 D (0.16)	0.87 D (0.17)	0.48 D (0.24)	1.5 D (0.24)	0.57 D (0.23)	8.2 D (0.26)	0.44 D (0.25)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.47 J (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	0.86 D (0.72)	ND (0.36)	ND (0.38)	0.51 (0.4)	ND (0.38)	ND (0.55)	2.7 (0.54)	11 D (5.3)	ND,D (5.6)	ND,D (5.5)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.69 (0.48)	ND (0.38)	ND (0.36)	ND (0.34)	2.5 D (0.72)	ND (0.36)	0.3 J (0.38)	0.82 (0.4)	ND (0.38)	0.46 J (0.55)	0.4 J (0.54)	4.9 J,D (5.3)	ND,D (5.6)	ND,D (5.5)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-275-PER6 Tank Group 06 3.0 - 3.5 5/24/2007	GP-275-SUB-1 Tank Group 06 5.0 - 5.5 9/4/2007	GP-275-SUB-2 Tank Group 06 5.0 - 5.5 9/4/2007	GP-275-SUB-3 Tank Group 06 5.0 - 5.5 9/4/2007	GP-277-LINE1 Unassigned 0.0 - 0.5 5/25/2007	GP-277-LINE2 Unassigned 0.0 - 0.5 5/25/2007	GP-277-LINE3 Unassigned 0.0 - 0.5 5/25/2007	GP-277-PER1 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER2 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER3 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER4 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER5 Unassigned 3.0 - 3.5 5/24/2007	GP-277-PER6 Unassigned 3.0 - 3.5 5/24/2007	GP-277-SUB1 Unassigned 5.0 - 5.5 5/24/2007
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-277-SUB2 Unassigned 5.0 - 5.6 5/24/2007	GP-277-SUB3 Unassigned 5.0 - 5.5 5/24/2007	GP280-01 Unassigned 3.0 8/29/2016	GP280-02 Unassigned 3.0 8/29/2016	GP280-03 Unassigned 2.0 8/29/2016	GP280-03 Unassigned 3.0 2/2/2017	GP280-04 Unassigned 3.0 8/29/2016	GP280-05 Unassigned 3.0 8/29/2016	GP280-06 Unassigned 3.0 8/29/2016	GP280-07 Unassigned 3.0 8/29/2016	GP280-08 Unassigned 1.0 8/29/2016	GP280-09 Unassigned 1.0 8/29/2016	GP280-10 Unassigned 2.0 8/29/2016	GP280-11 Unassigned 5.0 8/29/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	1.3 D (0.26)	2.1 D (0.25)	ND (0.008)	ND (0.007)	0.002 J (0.006)	NA	0.085 J (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	ND (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.008 (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
tert-Butylbenzene	10000	1800	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	ND (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	0.16 J,D (0.26)	0.92 D (0.25)	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.004 J (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Cyclohexane	10000	6900	NA	NA	0.002 J (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	0.005 J (0.009)	ND (0.01)	ND (0.006)	0.013 (0.008)	ND (0.64)	ND (0.006)	0.003 J (0.008)
1,2-Dibromoethane	3.7	0.005	NA	NA	ND (0.00074)	ND (0.00064)	ND (0.00059)	NA	ND (0.00068)	ND (0.00073)	ND (0.00092)	ND (0.00056)	ND (0.0065)	ND (0.0061)	ND (0.00072)	ND (0.00075)
1,2-Dichloroethane	85	0.5	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	ND (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Ethyl Benzene	880	70	0.53 D (0.26)	0.52 D (0.25)	ND (0.008)	ND (0.007)	ND (0.006)	NA	0.1 J (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.004 J (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Hexane	10000	5300	NA	NA	ND (0.008)	0.004 J (0.007)	0.002 J (0.006)	NA	0.34 J (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.003 J (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Methyl tert-butyl ether	8500	2	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.34)	ND (0.009)	ND (0.01)	ND (0.006)	ND (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	0.79 D (0.26)	1 D (0.25)	ND (0.008)	ND (0.007)	0.001 J (0.006)	NA	1.4 (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.003 J (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
1,2,4-Trimethylbenzene	4700	300	NA	NA	0.002 J (0.008)	ND (0.007)	ND (0.006)	NA	0.18 J (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.16 (0.008)	0.22 J (0.64)	ND (0.006)	ND (0.008)
1,3,5-Trimethylbenzene	4700	93	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	ND (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.026 (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Xylenes (total)	7900	1000	NA	NA	ND (0.008)	ND (0.007)	ND (0.006)	NA	0.24 J (0.45)	ND (0.009)	ND (0.01)	ND (0.006)	0.011 (0.008)	ND (0.64)	ND (0.006)	ND (0.008)
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	NA	NA	0.96 (0.26)	1.2 (0.22)	0.088 J (0.21)	NA	2.1 (0.24)	1.5 (0.26)	0.65 (0.32)	0.0048 J (0.019)	0.83 J (1.1)	0.85 (0.43)	0.31 (0.24)	1.1 (0.26)
Anthracene	190000	350	ND (0.54)	ND (0.54)	2.8 (0.26)	2.7 (0.22)	0.24 (0.21)	NA	4.5 (0.24)	2.1 (0.26)	1.6 (0.32)	0.021 (0.019)	2.7 (1.1)	1.4 (0.43)	0.94 (0.24)	2.1 (0.26)
Benzo(a)anthracene	130	340	ND (0.54)	ND (0.54)	1.9 (0.26)	1.9 (0.22)	0.43 (0.21)	NA	2.9 (0.24)	1.4 (0.26)	1.5 (0.32)	0.02 (0.019)	1.9 (1.1)	0.99 (0.43)	1.2 (0.24)	1.4 (0.26)
Benzo(a)pyrene	91	46	ND (0.54)	ND (0.54)	2.5 (0.26)	2 (0.22)	0.52 (0.21)	NA	2.3 (0.24)	1.1 (0.26)	1.3 (0.32)	0.021 (0.019)	1.2 (1.1)	0.58 (0.43)	1.3 (0.24)	1.1 (0.26)
Benzo(b)fluoranthene	76	170	0.55 (0.54)	ND (0.54)	2.4 (0.26)	2.4 (0.22)	0.61 (0.21)	NA	2.9 (0.24)	1.6 (0.26)	1.8 (0.32)	0.03 (0.019)	2.8 (1.1)	0.88 (0.43)	1.6 (0.24)	1.5 (0.26)
Benzo(g,h,i)perylene	190000	180	ND (0.54)	ND (0.54)	2.6 (0.26)	1.9 (0.22)	0.47 (0.21)	NA	1.5 (0.24)	1.2 (0.26)	1.2 (0.32)	0.022 (0.019)	1.4 (1.1)	0.67 (0.43)	1.1 (0.24)	1.1 (0.26)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	1.2 (0.26)	1 (0.22)	0.31 (0.21)	NA	1.1 (0.24)	0.83 (0.26)	0.9 (0.32)	0.012 J (0.019)	1.1 J (1.1)	0.41 J (0.43)	0.73 (0.24)	0.74 (0.26)
1,1-Biphenyl	34	1.5	NA	NA	1.5 (0.5)	2 (0.43)	ND (0.4)	NA	2 (0.47)	2.5 (0.51)	1.8 (0.62)	ND (0.038)	ND (2.2)	0.96 (0.85)	0.8 (0.48)	2.1 (0.51)
Chrysene	760	230	ND (0.54)	ND (0.54)	2.1 (0.26)	2.1 (0.22)	0.77 (0.21)	NA	3.6 (0.24)	1.7 (0.26)	1.9 (0.32)	0.046 (0.019)	8 (1.1)	4 (0.43)	1.3 (0.24)	1.6 (0.26)
Dibenz(a,h)anthracene	22	270	NA	NA	0.66 (0.26)	0.49 (0.22)	0.11 J (0.21)	NA	0.44 (0.24)	0.31 (0.26)	0.37 (0.32)	0.0057 J (0.019)	0.5 J (1.1)	0.31 J (0.43)	0.33 (0.24)	0.32 (0.26)
2,4-Dimethylphenol	10000	190	NA	NA	ND (0.5)	ND (0.43)	ND (0.4)	NA	1.1 (0.47)	ND (0.51)	ND (0.62)	ND (0.038)	ND (2.2)	ND (0.85)	ND (0.48)	ND (0.51)
2,4-Dinitrophenol	6400	19	NA	NA	ND (15)	ND (13)	ND (12)	NA	ND (14)	ND (15)	ND (19)	ND (1.1)	ND (65)	ND (25)	ND (14)	ND (15)
Fluoranthene	130000	3200	NA	NA	2.5 (0.26)	3.2 (0.22)	0.66 (0.21)	NA	6.6 (0.24)	2.6 (0.26)	2.6 (0.32)	0.036 (0.019)	5.2 (1.1)	1.6 (0.43)	1.6 (0.24)	2.7 (0.26)
Fluorene	130000	3800	ND (0.54)	ND (0.54)	1.5 (0.26)	1.8 (0.22)	0.1 J (0.21)	NA	3.3 (0.24)	1.3 (0.26)	0.93 (0.32)	0.0077 J (0.019)	2 (1.1)	2.7 (0.43)	0.45 (0.24)	1.3 (0.26)
Indeno(1,2,3-cd)pyrene	76	18000	ND (0.54)	ND (0.54)	1.8 (0.26)	1.4 (0.22)	0.38 (0.21)	NA	1.1 (0.24)	0.94 (0.26)	1 (0.32)	0.015 J (0.019)	0.88 J (1.1)	0.45 (0.43)	0.96 (0.24)	0.82 (0.26)
2-Methylnaphthalene	240	100	NA	NA	8.4 (0.26)	14 (0.22)	0.62 (0.21)	NA	20 (0.24)	20 (0.26)	14 (0.32)	0.053 (0.019)	2.5 (1.1)	8.1 (0.43)	5.1 (0.24)	17 (0.26)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	0.87 (0.5)	1.5 (0.43)	ND (0.4)	NA	4.2 (0.47)	1.1 (0.51)	2.3 (0.62)	ND (0.038)	ND (2.2)	ND (0.85)	0.4 J (0.48)	1.2 (0.51)
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.45 D (0.26)	0.55 D (0.25)	0.003 J (0.008)	ND (0.007)	ND (0.006)	NA	1.4 (0.45)	0.004 J (0.009)	ND (0.01)	ND (0.006)	0.005 J (0.008)	0.5 J (0.64)	ND (0.006)	ND (0.008)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	0.62 (0.54)	ND (0.54)	5.8 (0.26)	6.9 (0.22)	0.64 (0.21)	NA	11 (0.24)	6.7 (0.26)	5.2 (0.32)	0.05 (0.019)	7.4 (1.1)	8.5 (0.43)	2.8 (0.24)	6.1 (0.26)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	ND (2.6)	ND (2.2)	ND (2.1)	NA	ND (2.4)	ND (2.6)	ND (3.2)	ND (0.19)	ND (11)	ND (4.3)	ND (2.4)	ND (2.6)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	ND (2.5)	ND (2.2)	ND (2)	NA	ND (2.3)	ND (2.6)	ND (3.1)	ND (0.19)	ND (11)	ND (4.2)	ND (2.4)	ND (2.5)
Pyrene	96000	2200	0.53 J (0.54)	ND (0.54)	2.6 (0.26)	3.3 (0.22)	0.74 (0.21)	NA	7.5 (0.24)	2.3 (0.26)	2.4 (0.32)	0.055 (0.019)	5.6 (1.1)	2.3 (0.43)	1.7 (0.24)	2.5 (0.26)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP-277-SUB2 Unassigned 5.0 - 5.6 5/24/2007	GP-277-SUB3 Unassigned 5.0 - 5.5 5/24/2007	GP280-01 Unassigned 3.0 8/29/2016	GP280-02 Unassigned 3.0 8/29/2016	GP280-03 Unassigned 2.0 8/29/2016	GP280-03 Unassigned 3.0 2/2/2017	GP280-04 Unassigned 3.0 8/29/2016	GP280-05 Unassigned 3.0 8/29/2016	GP280-06 Unassigned 3.0 8/29/2016	GP280-07 Unassigned 3.0 8/29/2016	GP280-08 Unassigned 1.0 8/29/2016	GP280-09 Unassigned 1.0 8/29/2016	GP280-10 Unassigned 2.0 8/29/2016	GP280-11 Unassigned 5.0 8/29/2016
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	NA	NA	20.5 (0.665)	16.7 (0.624)	13.1 (2.12)	NA	11.7 (0.624)	17.4 (0.625)	22.4 (0.79)	7.17 (0.426)	10.9 (0.561)	11.9 (0.623)	14.6 (0.496)	34.9 (0.662)
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	NA	NA	286 (1.99)	254 (1.87)	214 (6.37)	NA	172 (1.87)	327 (1.88)	397 (2.37)	10.9 (1.28)	98.5 (1.68)	50.3 (1.87)	201 (1.49)	344 (1.98)
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	NA	NA	42.7 (1.33)	35.5 (1.25)	152 (4.25)	NA	31.3 (1.25)	43.9 (1.25)	40.6 (1.58)	12.4 (0.852)	32.9 (1.12)	21.6 (1.25)	35.8 (0.993)	70.1 (1.32)
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	NA	NA	51.4 (0.665)	41 (0.624)	226 (2.12)	51.8 (0.778)	37.9 (0.624)	38 (0.625)	94.5 (0.79)	37.5 (0.426)	85 (0.561)	60.1 (0.623)	67.1 (0.496)	44.1 (0.662)
Zinc	190000	12000	NA	NA	546 (2.66)	595 (2.49)	1180 (8.5)	NA	440 (2.5)	637 (2.5)	381 (3.16)	32.9 (1.7)	185 (2.24)	86.7 (2.49)	319 (1.99)	621 (2.65)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP280-12 Unassigned 2.0 8/29/2016	GP280-13 Unassigned 2.0 2/2/2017	GP280-14 Unassigned 2.0 2/2/2017	GP280-15 Unassigned 2.0 2/2/2017	GP284-01 Tank Group 06 0.5 - 1.0 2/24/2016	GP284-02 Tank Group 06 0.5 - 1.0 2/24/2016	GP284-03 Tank Group 06 0.5 - 1.0 2/24/2016	GP284-04 Tank Group 06 0.5 - 1.0 2/24/2016	GP676-1 Tank Group 07 1.5 4/28/2016	GP676-2 Tank Group 07 1.5 4/28/2016	GP676-3 Tank Group 07 1.5 4/28/2016	GP676-4 Tank Group 07 1.5 4/28/2016	GP676-5 Tank Group 07 1.5 4/28/2016	GP676-6 Tank Group 07 1.5 4/28/2016
Volatile Organic Compounds																
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	0.051 J (0.44)	ND (0.64)	ND (1.3)	ND (0.007)	ND (0.31)	ND (0.33)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	ND (0.006)	NA	NA	NA	ND (0.005)	0.005 J (0.006)	ND (0.005)	0.002 J (0.004)	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	10000	1800	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.004)	NA	NA	NA	NA	NA	NA
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA	NA
Cyclohexane	10000	6900	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	0.003 J (0.004)	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.006)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA	NA
Hexane	10000	5300	0.002 J (0.006)	NA	NA	NA	ND (0.005)	0.002 J (0.006)	ND (0.005)	0.044 (0.004)	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA	NA
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	0.006 (0.005)	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (0.006)	NA	NA	NA	ND (0.005)	ND (0.006)	ND (0.005)	0.013 (0.005)	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	ND (0.006)	NA	NA	NA	0.002 J (0.005)	0.022 (0.006)	ND (0.005)	0.004 J (0.004)	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																
Acenaphthene	190000	4700	0.31 (0.21)	NA	NA	NA	0.22 J (0.54)	0.27 (0.11)	ND (0.11)	ND (0.53)	NA	NA	NA	NA	NA	NA
Anthracene	190000	350	0.86 (0.21)	NA	NA	NA	0.31 J (0.54)	0.35 (0.11)	0.11 (0.11)	0.11 J (0.53)	0.5 (0.023)	8 (0.2)	0.42 (0.13)	1.2 (0.12)	0.67 (0.1)	0.29 (0.1)
Benzo(a)anthracene	130	340	0.79 (0.21)	NA	NA	NA	0.42 J (0.54)	0.53 (0.11)	0.2 (0.11)	0.32 J (0.53)	0.93 (0.023)	9.3 (0.2)	0.81 (0.13)	2.9 (0.12)	1.9 (0.1)	0.68 (0.1)
Benzo(a)pyrene	91	46	0.75 (0.21)	NA	NA	NA	0.44 J (0.54)	0.46 (0.11)	0.19 (0.11)	0.28 J (0.53)	0.93 (0.023)	5.2 (0.2)	0.87 (0.13)	3.8 (0.12)	1.9 (0.1)	0.56 (0.1)
Benzo(b)fluoranthene	76	170	0.82 (0.21)	NA	NA	NA	0.51 J (0.54)	0.59 (0.11)	0.25 (0.11)	0.42 J (0.53)	1.1 (0.023)	2.6 (0.2)	1.2 (0.13)	4.2 (0.12)	2.2 (0.1)	0.4 (0.1)
Benzo(g,h,i)perylene	190000	180	1 (0.21)	NA	NA	NA	0.47 J (0.54)	0.42 (0.11)	0.25 (0.11)	ND (0.53)	0.75 (0.023)	1.7 (0.2)	0.66 (0.13)	2.9 (0.12)	1.3 (0.1)	0.25 (0.1)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	0.35 (0.21)	NA	NA	NA	0.19 J (0.54)	0.2 (0.11)	0.077 J (0.11)	0.12 J (0.53)	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	34	1.5	0.75 (0.41)	NA	NA	NA	ND (1.1)	0.47 (0.21)	0.13 J (0.21)	ND (1)	NA	NA	NA	NA	NA	NA
Chrysene	760	230	1.3 (0.21)	NA	NA	NA	1.9 (0.54)	1.8 (0.11)	0.32 (0.11)	1.5 (0.53)	0.99 (0.023)	15 (0.2)	0.99 (0.13)	3 (0.12)	2 (0.1)	1.2 (0.1)
Dibenz(a,h)anthracene	22	270	0.28 (0.21)	NA	NA	NA	0.17 J (0.54)	0.1 J (0.11)	0.071 J (0.11)	ND (0.53)	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	10000	190	ND (0.41)	NA	NA	NA	ND (1.1)	ND (0.21)	ND (0.21)	ND (1)	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	6400	19	ND (12)	NA	NA	NA	ND (32)	ND (6.4)	ND (6.4)	ND (31)	NA	NA	NA	NA	NA	NA
Fluoranthene	130000	3200	0.96 (0.21)	NA	NA	NA	0.66 (0.54)	0.57 (0.11)	0.28 (0.11)	0.42 J (0.53)	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.4 (0.21)	NA	NA	NA	0.34 J (0.54)	0.41 (0.11)	0.069 J (0.11)	0.16 J (0.53)	0.24 (0.023)	9.8 (0.2)	0.39 (0.13)	0.46 (0.12)	0.27 (0.1)	0.28 (0.1)
Indeno(1,2,3-cd)pyrene	76	18000	0.63 (0.21)	NA	NA	NA	0.39 J (0.54)	0.31 (0.11)	0.14 (0.11)	ND (0.53)	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	100	5.5 (0.21)	NA	NA	NA	1.1 (0.54)	2.1 (0.11)	0.6 (0.11)	0.12 J (0.53)	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	0.68 (0.41)	NA	NA	NA	ND (1.1)	ND (0.21)	ND (0.21)	ND (1)	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.006)	NA	NA	NA	0.71 (0.54)	1.8 (0.11)	0.54 (0.11)	0.1 J (0.53)	0.37 J (0.44)	ND (0.64)	ND (1.3)	ND (0.007)	0.094 J (0.31)	0.14 J (0.33)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	2.6 (0.21)	NA	NA	NA	0.88 (0.54)	0.95 (0.11)	0.37 (0.11)	0.22 J (0.53)	1.3 (0.023)	38 (0.2)	1 (0.13)	3.4 (0.12)	1.3 (0.1)	1.3 (0.1)
bis(2-Ethylhexyl)phthalate	6500	130	ND (2.1)	NA	NA	NA	ND (5.4)	ND (1.1)	ND (1.1)	ND (5.3)	NA	NA	NA	NA	NA	NA
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	ND (2)	NA	NA	NA	ND (5.3)	ND (1.1)	ND (1.1)	ND (5.2)	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	1.1 (0.21)	NA	NA	NA	1.4 (0.54)	0.98 (0.11)	0.28 (0.11)	1 (0.53)	1.2 (0.023)	18 (0.2)	1 (0.13)	3.1 (0.12)	2 (0.1)	1.4 (0.1)
Per- and Polyfluoroalkyl Substances																
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			GP280-12	GP280-13	GP280-14	GP280-15	GP284-01	GP284-02	GP284-03	GP284-04	GP676-1	GP676-2	GP676-3	GP676-4	GP676-5	GP676-6
Area			Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07
Collection Depth (ft bgs)			2.0	2.0	2.0	2.0	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0	1.5	1.5	1.5	1.5	1.5	1.5
Sample Date			8/29/2016	2/2/2017	2/2/2017	2/2/2017	2/24/2016	2/24/2016	2/24/2016	2/24/2016	4/28/2016	4/28/2016	4/28/2016	4/28/2016	4/28/2016	4/28/2016
Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC														
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals																
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	960	130	11.4 (0.518)	NA	NA	NA	7.7 (0.522)	6.5 (0.523)	5.39 (0.499)	7.79 (2.51)	NA	NA	NA	NA	NA	NA
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1000	450	209 (1.55)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	64000	650	30.1 (1.04)	NA	NA	NA	34.3 (1.04)	17.9 (1.05)	22.1 (0.998)	53.1 (5.01)	NA	NA	NA	NA	NA	NA
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	16000	49000	60.7 (0.518)	39.8 (0.637)	26.4 (0.463)	63.2 (0.501)	119 (0.522)	29.3 (0.523)	28.6 (0.499)	633 (2.51)	NA	NA	NA	NA	NA	NA
Zinc	190000	12000	285 (2.07)	NA	NA	NA	538 (2.09)	149 (2.09)	94.6 (2)	886 (10)	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP676-7 Tank Group 07 1.5 4/28/2016	GP676-8 Tank Group 07 1.5 4/28/2016	GP676-9 Tank Group 07 1.5 4/28/2016	GP768-1 Tank Group 07 3.0 4/28/2016	GP768-2 Tank Group 07 3.0 4/28/2016	GP768-3 Tank Group 07 3.0 4/28/2016	GP768-4 Tank Group 07 2.0 4/28/2016	GP768-5 Tank Group 07 2.0 4/28/2016	GP768-6 Tank Group 07 2.0 4/28/2016
Volatile Organic Compounds											
Acetonitrile	4700	53	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	1.6	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	33	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	280	0.5	ND (0.35)	ND (0.33)	ND (0.38)	0.0006 J (0.004)	0.0008 J (0.006)	0.001 J (0.005)	ND (2.9)	0.005 (0.005)	ND (0.005)
2-Butanone	10000	400	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	10000	2300	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	1.8 J (2.9)	ND (0.005)	ND (0.005)
tert-Butylbenzene	10000	1800	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	ND (2.9)	ND (0.005)	ND (0.005)
Carbon Disulfide	10000	620	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	ND (0.004)	0.004 J (0.006)	0.001 J (0.005)	70 (2.9)	ND (0.005)	ND (0.005)
Cyclohexane	10000	6900	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	ND (2.9)	ND (0.005)	ND (0.005)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	ND (0.00052)	ND (0.00052)	ND (0.00058)	ND (0.00051)	ND (0.00057)	ND (0.00052)
1,2-Dichloroethane	85	0.5	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	ND (2.9)	ND (0.005)	ND (0.005)
Ethyl Benzene	880	70	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	0.72 J (2.9)	ND (0.005)	ND (0.005)
Hexane	10000	5300	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	ND (2.9)	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	8500	2	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	ND (2.9)	ND (0.005)	ND (0.005)
Methylene Chloride	10000	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propylbenzene	10000	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	ND (0.004)	ND (0.006)	0.001 J (0.005)	1.7 J (2.9)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	19 (2.9)	ND (0.005)	ND (0.005)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	15 (2.9)	ND (0.005)	ND (0.005)
Xylenes (total)	7900	1000	NA	NA	NA	ND (0.004)	ND (0.006)	ND (0.005)	16 (2.9)	ND (0.005)	ND (0.005)
Semivolatile Organic Compounds											
Acenaphthene	190000	4700	NA	NA	NA	ND (0.018)	0.0056 J (0.019)	0.005 J (0.021)	1.5 (0.089)	ND (0.02)	ND (0.018)
Anthracene	190000	350	1 J (1)	0.97 (0.11)	1.9 (1.1)	0.0059 J (0.018)	0.021 (0.019)	0.029 (0.021)	0.9 (0.089)	0.016 J (0.02)	ND (0.018)
Benzo(a)anthracene	130	340	0.83 J (1)	1.5 (0.11)	0.61 J (1.1)	0.024 (0.018)	0.073 (0.019)	0.058 (0.021)	0.41 (0.089)	0.029 (0.02)	0.016 J (0.018)
Benzo(a)pyrene	91	46	1.5 (1)	0.86 (0.11)	0.59 J (1.1)	0.026 (0.018)	0.12 (0.019)	0.079 (0.021)	0.33 (0.089)	0.05 (0.02)	0.021 (0.018)
Benzo(b)fluoranthene	76	170	0.61 J (1)	0.46 (0.11)	0.66 J (1.1)	0.037 (0.018)	0.14 (0.019)	0.15 (0.021)	0.31 (0.089)	0.062 (0.02)	0.025 (0.018)
Benzo(g,h,i)perylene	190000	180	1.2 (1)	0.36 (0.11)	0.67 J (1.1)	0.024 (0.018)	0.11 (0.019)	0.12 (0.021)	0.21 (0.089)	0.059 (0.02)	0.02 (0.018)
Benzo[b/j/k]fluoranthenes	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	76	610	NA	NA	NA	0.019 (0.018)	0.056 (0.019)	0.037 (0.021)	0.083 J (0.089)	0.021 (0.02)	0.011 J (0.018)
1,1-Biphenyl	34	1.5	NA	NA	NA	ND (0.034)	ND (0.037)	ND (0.04)	1 (0.17)	ND (0.038)	ND (0.036)
Chrysene	760	230	3.1 (1)	2.2 (0.11)	0.99 J (1.1)	0.026 (0.018)	0.084 (0.019)	0.067 (0.021)	0.88 (0.089)	0.033 (0.02)	0.014 J (0.018)
Dibenz(a,h)anthracene	22	270	NA	NA	NA	0.0087 J (0.018)	0.029 (0.019)	0.034 (0.021)	0.088 J (0.089)	0.013 J (0.02)	0.0074 J (0.018)
2,4-Dimethylphenol	10000	190	NA	NA	NA	ND (0.034)	ND (0.037)	ND (0.04)	ND (0.17)	ND (0.038)	ND (0.036)
2,4-Dinitrophenol	6400	19	NA	NA	NA	ND (1)	ND (1.1)	ND (1.2)	ND (5.2)	ND (1.1)	ND (1.1)
Fluoranthene	130000	3200	NA	NA	NA	0.026 (0.018)	0.086 (0.019)	0.06 (0.021)	0.39 (0.089)	0.029 (0.02)	0.013 J (0.018)
Fluorene	130000	3800	1 J (1)	0.85 (0.11)	3.1 (1.1)	ND (0.018)	0.0056 J (0.019)	0.0069 J (0.021)	2 (0.089)	0.0061 J (0.02)	ND (0.018)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	0.02 (0.018)	0.085 (0.019)	0.097 (0.021)	0.16 (0.089)	0.043 (0.02)	0.014 J (0.018)
2-Methylnaphthalene	240	100	NA	NA	NA	0.0049 J (0.018)	0.022 (0.019)	0.045 (0.021)	13 (0.089)	0.018 J (0.02)	0.0046 J (0.018)
1-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	16000	49	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	16000	49	NA	NA	NA	ND (0.034)	ND (0.037)	ND (0.04)	ND (0.17)	ND (0.038)	ND (0.036)
Naphthalene	66	25	ND (0.35)	ND (0.33)	ND (0.38)	ND (0.004)	ND (0.006)	ND (0.005)	3.4 (2.9)	ND (0.005)	ND (0.005)
4-Nitrophenol	26000	6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	4 (1)	3.4 (0.11)	13 (1.1)	0.0095 J (0.018)	0.032 (0.019)	0.049 (0.021)	4.3 (0.089)	0.02 (0.02)	0.006 J (0.018)
bis(2-Ethylhexyl)phthalate	6500	130	NA	NA	NA	ND (0.18)	ND (0.19)	ND (0.21)	ND (0.89)	ND (0.2)	ND (0.18)
Dimethylphthalate	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	10000	4000	NA	NA	NA	ND (0.17)	ND (0.18)	ND (0.2)	ND (0.87)	ND (0.19)	ND (0.18)
Pyrene	96000	2200	3.7 (1)	2.8 (0.11)	2.6 (1.1)	0.025 (0.018)	0.1 (0.019)	0.06 (0.021)	1.4 (0.089)	0.035 (0.02)	0.015 J (0.018)
Per- and Polyfluoroalkyl Substances											
Perfluorobutanesulfonic Acid (PFBS)	10000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	64	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F1
Summary of Historical Soil Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location Area Collection Depth (ft bgs) Sample Date Comments	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GP676-7 Tank Group 07 1.5 4/28/2016	GP676-8 Tank Group 07 1.5 4/28/2016	GP676-9 Tank Group 07 1.5 4/28/2016	GP768-1 Tank Group 07 3.0 4/28/2016	GP768-2 Tank Group 07 3.0 4/28/2016	GP768-3 Tank Group 07 3.0 4/28/2016	GP768-4 Tank Group 07 2.0 4/28/2016	GP768-5 Tank Group 07 2.0 4/28/2016	GP768-6 Tank Group 07 2.0 4/28/2016		
Other			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Antimony	1300	27	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Arsenic	61	29	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Barium	190000	8200	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Beryllium	6400	320	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cadmium	1600	38	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium III	190000	190000	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium VI	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cobalt	960	130	NA	NA	NA	4.34 (0.38)	6.41 (0.375)	9.74 (0.449)	4.11 (0.414)	6.66 (0.495)	3.67 (0.397)		
Cyanide (total)	1900	200	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Lead	1000	450	NA	NA	NA	18.6 (1.14)	86.3 (1.12)	91.7 (1.35)	39.5 (1.24)	27.8 (1.49)	10.8 (1.19)		
Mercury	510	10	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Nickel	64000	650	NA	NA	NA	43.1 (0.76)	45.3 (0.749)	149 (0.898)	43.7 (0.828)	15.2 (0.991)	26.9 (0.793)		
Selenium	16000	26	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Vanadium	16000	49000	NA	NA	NA	149 (0.38)	214 (0.375)	321 (0.449)	169 (0.414)	144 (0.495)	34.6 (0.397)		
Zinc	190000	12000	NA	NA	NA	62.5 (1.52)	134 (1.5)	157 (1.8)	307 (1.66)	60 (1.98)	25.2 (1.59)		

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 BF, L, H, and IQ are unknown qualifiers.
4 If the location does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Grey shaded concentrations exceed the Non-Res Direct Contact with Soil MSC.
6 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration
B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-115	B-115	B-115	B-115	B-116	B-116	B-116	B-116	B-116	B-116	B-116	B-117	B-117
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/24/2005	6/7/2006	1/4/2013	5/4/2016	5/24/2005	8/10/2006	1/4/2013	5/4/2016	8/24/2016	8/25/2016	8/25/2016	5/24/2005	6/7/2006
Comments	MSC											Field Duplicate		
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	NA	NA	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)
Cumene	3.5	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.0005)	NA	NA	ND (0.002)	0.0005 J (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000028)	ND (0.00002)	ND (0.0000095)	NA	NA	ND (0.00002)	ND (0.0000094)	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.005)	ND (0.005)	0.002 (0.001)	ND (0.0005)	NA	NA	0.0017 (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	NA	NA	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	NA	NA	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	NA	NA	0.0037 (0.002)	ND (0.0005)	NA	NA	0.0034 (0.002)	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA
1,3,5-Trimethylbenzene	0.53	NA	NA	ND (0.002)	ND (0.0005)	NA	NA	ND (0.002)	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA
Xylenes (total)	10	ND (0.005)	ND (0.005)	0.0074 (0.001)	ND (0.0005)	NA	NA	0.0063 (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	0.016 (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	ND (0.001)	0.000065 (0.00001)	NA	NA	0.000363 (0.0001)	0.00027 (0.00001)	0.000036 J (0.00005)	0.00011 (0.000051)	0.00008 (0.000051)	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	ND (0.001)	0.000034 J (0.00001)	NA	NA	ND (0.0001)	0.000058 (0.00001)	0.000021 J (0.00005)	0.000045 J (0.000051)	0.000028 J (0.000051)	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	ND (0.001)	ND (0.00001)	NA	NA	ND (0.0001)	0.000013 J (0.00001)	ND (0.00005)	0.000018 J (0.000051)	ND (0.000051)	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	ND (0.001)	0.000012 J (0.00001)	NA	NA	ND (0.0001)	0.000017 J (0.00001)	ND (0.00005)	0.000023 J (0.000051)	ND (0.000051)	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	ND (0.001)	ND (0.00001)	NA	NA	ND (0.0001)	ND (0.00001)	ND (0.00005)	ND (0.000051)	ND (0.000051)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.01)	ND (0.005)	ND (0.001)	0.000035 J (0.00001)	NA	NA	ND (0.0001)	0.000066 (0.00001)	0.000031 J (0.00005)	0.000059 (0.000051)	0.000039 J (0.000051)	ND (0.01)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.01)	ND (0.005)	ND (0.001)	0.00013 (0.00001)	NA	NA	0.0015 (0.0001)	0.0015 (0.00001)	0.000054 (0.00005)	0.0011 (0.000051)	0.00091 (0.000051)	ND (0.01)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.01)	ND (0.005)	0.00124 (0.001)	ND (0.000031)	NA	NA	0.000793 (0.0001)	0.00007 (0.00003)	0.000031 J (0.00006)	ND (0.000061)	ND (0.000062)	ND (0.01)	ND (0.005)
Phenanthrene	1.1	ND (0.01)	ND (0.005)	ND (0.001)	0.0004 (0.000031)	NA	NA	0.000946 (0.0001)	0.000054 J (0.00003)	ND (0.00006)	ND (0.000061)	ND (0.000062)	ND (0.01)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.01)	ND (0.005)	ND (0.001)	0.00024 (0.00001)	NA	NA	0.000383 (0.0001)	0.00065 (0.00001)	0.00029 (0.00005)	0.00039 (0.000051)	0.00032 (0.000051)	ND (0.01)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	ND (0.001)	NA	NA	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	ND (0.003)	ND (0.00013)	NA	NA	ND (0.003)	0.00088 J (0.00013)	ND (0.001)	0.00014 J (0.001)	0.00016 J (0.001)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-115	B-115	B-115	B-115	B-116	B-116	B-116	B-116	B-116	B-116	B-116	B-117	B-117
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/24/2005	6/7/2006	1/4/2013	5/4/2016	5/24/2005	8/10/2006	1/4/2013	5/4/2016	8/24/2016	8/25/2016	8/25/2016	5/24/2005	6/7/2006
Comments	MSC											Field Duplicate		

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-117	B-117	B-123	B-123	B-123	B-125	B-125	B-125	B-125	B-125	B-126	B-126	B-126
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/4/2016	8/22/2016	5/25/2005	6/7/2006	1/8/2013	5/24/2005	6/6/2006	1/8/2013	5/9/2016	8/23/2016	5/24/2005	6/6/2006	1/7/2013
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	0.066 (0.005)	0.073 (0.005)	0.173 (0.001)	0.009 (0.0005)	0.009 (0.001)	0.2 (0.005)	0.22 (0.005)	0.189 (0.005)
Cumene	3.5	ND (0.0005)	ND (0.002)	0.036 (0.005)	0.038 (0.005)	0.0297 (0.002)	0.007 (0.005)	0.01 (0.005)	0.014 (0.002)	0.008 (0.0005)	0.009 (0.002)	0.026 (0.005)	0.042 (0.005)	0.0635 (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000095)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.000029)	ND (0.000028)	ND (0.00002)	ND (0.0000096)	ND (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.00002)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	0.0014 (0.001)	0.01 (0.005)	0.012 (0.005)	0.0013 (0.001)	0.0006 J (0.0005)	ND (0.001)	0.019 (0.005)	0.024 (0.005)	0.0177 (0.001)
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	0.075 (0.005)	0.079 (0.005)	0.0061 (0.001)	0.003 (0.0005)	0.004 (0.001)	0.05 (0.005)	0.061 (0.005)	0.0431 (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	NA	NA	0.0024 (0.002)	NA	NA	ND (0.002)	0.002 J (0.0005)	0.0008 J (0.002)	NA	NA	0.0123 (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	NA	NA	ND (0.002)	NA	NA	ND (0.002)	0.003 (0.0005)	0.002 (0.002)	NA	NA	0.0066 (0.002)
Xylenes (total)	10	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	0.006 (0.001)	0.078 (0.005)	0.11 (0.005)	0.009 (0.001)	0.03 (0.0005)	0.025 (0.001)	0.087 (0.005)	0.11 (0.005)	0.0762 (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0018 (0.00001)	0.001 (0.000051)	NA	NA	0.00451 (0.00011)	NA	NA	0.00215 (0.0001)	0.0015 (0.00001)	0.0019 (0.000051)	NA	NA	0.0105 (0.001)
Benzo(a)anthracene	0.0039	0.00046 (0.00001)	0.00025 (0.000051)	NA	NA	ND (0.00011)	NA	NA	0.000559 (0.0001)	0.00045 (0.00001)	0.00016 (0.000051)	NA	NA	0.000363 (0.0001)
Benzo(a)pyrene	0.0002	0.00034 (0.00001)	0.00019 J (0.000051)	NA	NA	ND (0.00011)	NA	NA	0.000262 (0.0001)	0.00023 (0.00001)	0.00004 J (0.000051)	NA	NA	0.000119 (0.0001)
Benzo(b)fluoranthene	0.0012	0.00042 (0.00001)	0.00023 J (0.000051)	NA	NA	ND (0.00011)	NA	NA	0.000224 (0.0001)	0.00025 (0.00001)	0.000046 J (0.000051)	NA	NA	ND (0.0001)
Benzo(g,h,i)perylene	0.00026	0.00022 (0.00001)	0.00013 J (0.000051)	NA	NA	ND (0.00011)	NA	NA	ND (0.0001)	0.00007 (0.00001)	0.000012 J (0.000051)	NA	NA	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00054 (0.00001)	0.00034 (0.000051)	ND (0.01)	ND (0.005)	ND (0.00011)	ND (0.01)	ND (0.005)	0.000414 (0.0001)	0.00034 (0.00001)	0.00013 (0.000051)	ND (0.01)	ND (0.005)	0.000296 (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00074 (0.00001)	0.00024 (0.000051)	0.031 (0.01)	0.045 (0.005)	0.0144 (0.0011)	0.015 (0.01)	0.017 (0.005)	0.00577 (0.001)	0.0048 (0.00001)	0.0066 (0.000051)	0.012 (0.01)	0.036 (0.005)	0.0495 (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.00011 (0.000031)	ND (0.000061)	ND (0.01)	ND (0.005)	0.00212 (0.00011)	ND (0.01)	0.007 (0.005)	0.00116 (0.0001)	0.0004 (0.00003)	0.00031 (0.000061)	ND (0.01)	0.023 (0.005)	0.0253 (0.001)
Phenanthrene	1.1	0.00094 (0.000031)	0.0011 (0.000061)	ND (0.01)	0.017 (0.005)	0.00534 (0.0011)	ND (0.01)	0.007 (0.005)	0.00148 (0.0001)	0.0012 (0.00003)	0.0033 (0.000061)	ND (0.01)	0.016 (0.005)	0.0544 (0.001)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0033 (0.00001)	0.0024 (0.000051)	ND (0.01)	0.007 (0.005)	0.00244 (0.00011)	ND (0.01)	0.007 (0.005)	0.00255 (0.0001)	0.0021 (0.00001)	0.0014 (0.000051)	ND (0.01)	0.006 (0.005)	0.00388 (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	NA	NA	NA	ND (0.001)	ND (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.00013)	0.00025 J (0.001)	NA	NA	ND (0.003)	NA	NA	0.0044 (0.003)	0.00024 J (0.00013)	ND (0.001)	NA	NA	ND (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-117	B-117	B-123	B-123	B-123	B-125	B-125	B-125	B-125	B-125	B-126	B-126	B-126
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/4/2016	8/22/2016	5/25/2005	6/7/2006	1/8/2013	5/24/2005	6/6/2006	1/8/2013	5/9/2016	8/23/2016	5/24/2005	6/6/2006	1/7/2013
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-126	B-126	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/10/2016	8/23/2016	1/1/1999	1/1/2000	1/1/2001	1/1/2002	11/13/2003	10/21/2004	5/24/2005	11/9/2005	6/6/2006	12/4/2006	1/8/2013
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.095 (0.005)	0.078 (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0197 (0.001)
Cumene	3.5	0.06 (0.005)	0.04 (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0106 (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000097)	ND (0.000028)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00002)
Ethyl Benzene	0.7	0.013 (0.005)	0.009 (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.04 (0.005)	0.029 (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
1,2,4-Trimethylbenzene	0.53	0.008 J (0.005)	0.005 J (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
1,3,5-Trimethylbenzene	0.53	0.007 J (0.005)	0.004 J (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Xylenes (total)	10	0.064 (0.005)	0.047 (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0011 (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0091 (0.00001)	0.0066 (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000916 (0.0001)
Benzo(a)anthracene	0.0039	0.00071 (0.00001)	0.00082 (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000356 (0.0001)
Benzo(a)pyrene	0.0002	0.00038 (0.00001)	0.00039 J (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0001)
Benzo(b)fluoranthene	0.0012	0.00036 (0.00001)	0.00039 J (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0001)
Benzo(g,h,i)perylene	0.00026	0.00011 (0.00001)	0.00014 J (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.0006 (0.00001)	0.00067 (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000331 (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	ND (0.001)	ND (0.004)	ND (0.004)	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.043 (0.0001)	0.039 (0.00052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00141 (0.0001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	ND (0.01)	ND (0.01)	ND (0.01)	NA	ND (0.0001)	NA	ND (0.002)	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.022 (0.00031)	0.0054 (0.000062)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0001)
Phenanthrene	1.1	0.053 (0.00031)	0.0051 (0.000062)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000496 (0.0001)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	0.003	ND (0.003)	ND (0.003)	ND (0.001)	ND (0.002)	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0047 (0.00001)	0.0057 (0.000052)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.003 (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	ND (0.01)	0.0153	NA	ND (0.001)	ND (0.01)	ND (0.001)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	ND (0.008)	ND (0.008)	ND (0.008)	ND (0.008)	ND (0.005)	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	0.16	0.113	0.371	0.173	0.21	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	ND (0.01)	ND (0.01)	0.037	ND (0.01)	ND (0.01)	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	ND (0.01)	ND (0.01)	0.012	ND (0.01)	ND (0.05)	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.00013)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0035 (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.005)	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-126	B-126	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131	B-131
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/10/2016	8/23/2016	1/1/1999	1/1/2000	1/1/2001	1/1/2002	11/13/2003	10/21/2004	5/24/2005	11/9/2005	6/6/2006	12/4/2006	1/8/2013
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-131	B-131	B-131	B-131	B-132	B-132	B-132	B-132D	B-132D	B-132D	B-132D	B-132D	B-132D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/8/2013	6/2/2014	5/20/2015	5/5/2016	6/6/2006	5/11/2016	8/24/2016	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/1/2012	3/29/2013
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.0011 (0.001)	0.00029 J (0.0005)	0.002 (0.001)	0.001 (0.0005)	ND (0.005)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.013 (0.002)	0.0121 (0.001)	0.011 (0.002)	0.008 (0.0005)	ND (0.005)	0.008 (0.0005)	0.005 (0.002)	NA	NA	NA	NA	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.00002)	ND (0.000029)	ND (0.0000097)	ND (0.000029)	ND (0.0000096)	ND (0.000029)	NA	NA	NA	NA	NA	NA
Ethyl Benzene	0.7	0.00032 J (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.00061 J (0.001)	0.0003 J (0.001)	0.0009 J (0.001)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	NA	ND (0.0005)	ND (0.002)	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	NA	ND (0.0005)	ND (0.002)	NA	NA	NA	NA	NA	NA
Xylenes (total)	10	0.00062 J (0.001)	0.00056 J (0.001)	0.0006 J (0.001)	0.0006 J (0.0005)	ND (0.005)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.000477 (0.0001)	0.000747 (0.0001)	0.0007 (0.0005)	0.00076 (0.00001)	NA	0.013 (0.0001)	0.0015 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.000169 (0.0001)	0.000258 (0.0001)	0.0004 J (0.0005)	0.00037 (0.00001)	NA	0.0077 (0.0001)	0.00088 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND (0.0001)	ND (0.0001)	0.0002 J (0.0005)	0.00009 (0.00001)	NA	0.0044 (0.0001)	0.00049 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.0001)	ND (0.0001)	0.0002 J (0.0005)	0.00012 (0.00001)	NA	0.0056 (0.0001)	0.00057 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000021 J (0.00001)	NA	0.0015 (0.0001)	0.00017 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000132 (0.0001)	0.000206 (0.0001)	0.0004 J (0.0005)	0.00029 (0.00001)	ND (0.005)	0.0051 (0.0001)	0.00061 (0.00005)	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00108 (0.0001)	0.00174 (0.0001)	0.002 (0.0005)	0.0019 (0.00001)	ND (0.005)	0.051 (0.0001)	0.027 (0.0005)	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.0001)	ND (0.0001)	ND (0.0005)	ND (0.00003)	ND (0.005)	0.0014 (0.00031)	ND (0.00006)	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	0.00043 (0.0001)	0.000333 (0.0001)	0.0004 J (0.0005)	0.00066 (0.00003)	ND (0.005)	0.074 (0.00031)	0.02 (0.0006)	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00113 (0.0001)	0.00251 (0.0001)	0.003 (0.0005)	0.0023 (0.00001)	ND (0.005)	0.019 (0.0001)	0.0034 (0.00005)	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	0.0043 (0.002)	NA	0.0037 (0.002)	0.004 (0.002)	0.0024 J (0.004)	0.0035 (0.003)
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	ND (0.005)	NA	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)
Lead	0.005	NA	NA	NA	NA	ND (0.001)	NA	NA	ND (0.001)	NA	0.000099 J (0.001)	0.00019 J (0.001)	ND (0.005)	0.0058 (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	0.247 (0.005)	NA	0.265 (0.005)	0.249 (0.005)	0.283 (0.015)	0.275 (0.015)
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.004)	0.002 J (0.003)
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)
Lead	0.005	ND (0.003)	0.0016 J (0.003)	0.00013 J (0.001)	ND (0.00013)	NA	ND (0.00013)	0.00012 J (0.001)	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	0.246 (0.005)	0.257 (0.005)	0.248 (0.005)	0.264 (0.015)	0.274 (0.015)
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-131	B-131	B-131	B-131	B-132	B-132	B-132	B-132D	B-132D	B-132D	B-132D	B-132D	B-132D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/8/2013	6/2/2014	5/20/2015	5/5/2016	6/6/2006	5/11/2016	8/24/2016	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/1/2012	3/29/2013
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-132D	B-132D	B-132D	B-132D	B-132D	B-133	B-133	B-133D	B-133D	B-133D	B-133D	B-133D	B-133D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/3/2016	6/27/2019	11/14/2019	5/4/2021	4/25/2022	1/9/2013	5/5/2016	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/2/2012	3/29/2013
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.0005)	ND (0.001)	ND (0.001)	0.00021 J (0.001)	ND (0.0005)	ND (0.001)	ND (0.0005)	NA	NA	NA	NA	ND (0.0005)	ND (0.001)
Cumene	3.5	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)	0.052 (0.002)	0.059 (0.0005)	NA	NA	NA	NA	ND (0.005)	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000094)	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.000021)	ND (0.00002)	ND (0.0000096)	NA	NA	NA	NA	ND (0.000015)	ND (0.00002)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0017 (0.001)	ND (0.0005)	NA	NA	NA	NA	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	0.002 (0.0005)	0.002 (0.001)	0.001 (0.001)	0.0021 (0.001)	0.0024 (0.001)	0.0032 (0.001)	0.001 (0.0005)	NA	NA	NA	NA	0.0033 (0.001)	0.0016 (0.001)
tert Butyl alcohol	--	NA	0.011 J (0.025)	ND (0.025)	ND (0.05)	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	NA	NA	NA	NA	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	0.0036 (0.002)	0.0007 J (0.0005)	NA	NA	NA	NA	ND (0.005)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.0005)	NA	NA	NA	NA	ND (0.005)	ND (0.002)
Xylenes (total)	10	ND (0.0005)	ND (0.005)	ND (0.003)	ND (0.006)	ND (0.001)	0.0091 (0.001)	0.002 (0.0005)	NA	NA	NA	NA	ND (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.000088 (0.00001)	ND (0.0005)	ND (0.0005)	0.00011 J (0.0005)	ND (0.00008)	0.00566 (0.001)	0.011 (0.0001)	NA	NA	NA	NA	0.0001 B (0.0001)	0.000133 (0.0001)
Benzo(a)anthracene	0.0039	0.000018 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.0000259 J (0.00004)	0.000866 (0.0001)	0.0017 (0.0001)	NA	NA	NA	NA	ND (0.00005)	ND (0.0001)
Benzo(a)pyrene	0.0002	0.000017 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00004)	0.000245 (0.0001)	0.00072 (0.0001)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Benzo(b)fluoranthene	0.0012	0.000018 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.0000283 J (0.00004)	0.000193 (0.0001)	0.00081 (0.0001)	NA	NA	NA	NA	ND (0.00005)	ND (0.0001)
Benzo(g,h,i)perylene	0.00026	0.000013 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00008)	ND (0.0001)	0.00023 J (0.0001)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000015 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00008)	0.000663 (0.0001)	0.0013 (0.0001)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.000018 J (0.00001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00008)	0.0264 (0.001)	0.033 (0.0001)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.000082 (0.00003)	ND (0.0005)	ND (0.0005)	0.00013 J (0.0005)	ND (0.00008)	0.00141 (0.0001)	ND (0.0003)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Phenanthrene	1.1	0.00018 (0.00003)	ND (0.0005)	ND (0.0005)	0.00027 J (0.0005)	0.000112 (0.00008)	0.0327 (0.001)	0.056 (0.0003)	NA	NA	NA	NA	0.00048 (0.00005)	0.000415 (0.0001)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.000033 J (0.00001)	ND (0.0005)	ND (0.0005)	0.00014 J (0.0005)	0.0000508 J (0.00008)	0.00445 (0.0001)	0.0074 (0.0001)	NA	NA	NA	NA	ND (0.0001)	ND (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	0.0109 (0.002)	NA	0.0097 (0.002)	0.0112 (0.002)	0.0076 (0.004)	0.0102 (0.003)	
Cobalt	0.029	NA	NA	NA	NA	NA	NA	0.0024 J (0.005)	NA	0.0025 J (0.005)	0.0027 J (0.005)	0.0023 J (0.05)	0.0011 J (0.05)	
Lead	0.005	NA	NA	NA	NA	NA	NA	0.00012 J (0.001)	NA	ND (0.001)	0.00045 J (0.001)	ND (0.005)	0.0085 (0.003)	
Manganese	0.3	NA	NA	NA	NA	NA	NA	0.21 (0.005)	NA	0.233 (0.005)	0.225 (0.005)	0.291 (0.015)	0.249 (0.015)	
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	0.0027 (0.002)	0.0032 (0.002)	0.0021 (0.002)	0.004 (0.004)	0.0056 (0.003)	
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.005)	0.0021 J (0.05)	0.0008 J (0.05)	
Lead	0.005	ND (0.00013)	ND (0.003)	0.0011 (0.0005)	ND (0.00052)	ND (0.001)	ND (0.003)	ND (0.00013)	NA	NA	NA	ND (0.005)	0.006 (0.003)	
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	0.199 (0.005)	0.229 (0.005)	0.204 (0.005)	0.278 (0.015)	0.229 (0.015)	
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-132D	B-132D	B-132D	B-132D	B-132D	B-133	B-133	B-133D	B-133D	B-133D	B-133D	B-133D	B-133D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/3/2016	6/27/2019	11/14/2019	5/4/2021	4/25/2022	1/9/2013	5/5/2016	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/2/2012	3/29/2013
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-133D	B-133D	B-133D	B-134	B-134	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/3/2016	8/25/2016	8/25/2016	1/9/2013	5/11/2016	5/31/2012	8/20/2012	11/2/2012	2/5/2013	4/1/2013	5/3/2016	5/3/2016	7/22/2021
Comments	MSC												Field Duplicate	
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.49
Volatile Organic Compounds														
Benzene	0.005	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	0.002 (0.0005)	NA	ND (0.001)	ND (0.0005)	NA	ND (0.001)	ND (0.0005)	ND (0.0005)	NA
Cumene	3.5	ND (0.0005)	ND (0.002)	ND (0.002)	0.0678 (0.002)	0.1 (0.0005)	NA	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	ND (0.0005)	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000095)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.0000097)	NA	ND (0.000029)	ND (0.000015)	NA	ND (0.00002)	ND (0.0000095)	ND (0.0000095)	NA
Ethyl Benzene	0.7	ND (0.0005)	ND (0.001)	ND (0.001)	0.0019 (0.001)	ND (0.0005)	NA	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	ND (0.0005)	NA
Methyl tert-butyl ether	0.02	0.001 (0.0005)	ND (0.001)	0.001 (0.001)	0.0025 (0.001)	ND (0.0005)	NA	0.002 (0.001)	0.0034 (0.001)	NA	0.0018 (0.001)	0.002 (0.0005)	0.001 (0.0005)	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	0.0006 J (0.0005)	NA	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	ND (0.0005)	NA
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	ND (0.002)	0.0047 (0.002)	ND (0.0005)	NA	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	ND (0.0005)	NA
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	ND (0.002)	0.002 (0.002)	0.0007 J (0.0005)	NA	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	ND (0.0005)	NA
Xylenes (total)	10	ND (0.0005)	ND (0.001)	ND (0.001)	0.0112 (0.001)	0.0005 J (0.0005)	NA	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	ND (0.0005)	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.00018 (0.00001)	ND (0.00005)	0.00018 (0.00005)	0.00526 (0.001)	0.002 (0.00001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	0.000069 (0.00001)	0.000039 J (0.00001)	NA
Benzo(a)anthracene	0.0039	0.000024 J (0.00001)	ND (0.00005)	ND (0.00005)	0.000148 (0.0001)	0.00046 (0.00001)	NA	ND (0.0005)	0.00018 (0.00005)	NA	ND (0.0001)	ND (0.00001)	0.000011 J (0.00001)	NA
Benzo(a)pyrene	0.0002	0.000017 J (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.0001)	0.00025 (0.00001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00001)	0.000012 J (0.00001)	NA
Benzo(b)fluoranthene	0.0012	0.000015 J (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.0001)	0.0003 (0.00001)	NA	ND (0.0005)	0.000068 (0.00005)	NA	ND (0.0001)	ND (0.00001)	0.000013 J (0.00001)	NA
Benzo(g,h,i)perylene	0.00026	0.00001 J (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.0001)	0.000075 (0.00001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00001)	0.000017 J (0.00001)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000021 J (0.00001)	ND (0.00005)	ND (0.00005)	0.000121 (0.0001)	0.00039 (0.00001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00001)	ND (0.00001)	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00003 J (0.00001)	ND (0.00005)	0.000014 J (0.00005)	0.0319 (0.001)	0.0087 (0.00001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	0.000012 J (0.00001)	0.000011 J (0.00001)	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00003)	0.000039 J (0.00006)	ND (0.00006)	0.000964 (0.0001)	ND (0.000031)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00003)	ND (0.00003)	NA
Phenanthrene	1.1	0.00049 (0.00003)	ND (0.00006)	0.00055 (0.00006)	0.029 (0.001)	0.0071 (0.000031)	NA	0.0002 J (0.0005)	0.00019 (0.00005)	NA	0.000162 (0.0001)	0.00027 (0.00003)	0.00027 (0.00003)	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.000047 J (0.00001)	ND (0.00005)	ND (0.00005)	0.00193 (0.0001)	0.0018 (0.00001)	NA	ND (0.0005)	0.000044 J (0.0001)	NA	ND (0.0001)	0.000017 J (0.00001)	0.00002 J (0.00001)	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000034 (0.0000016)
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000089 (0.0000016)
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000018 (0.0000016)
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00006 (0.0000016)
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000073 (0.0000016)
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000097 (0.0000016)
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	0.0041 (0.002)	0.0054 (0.002)	0.0026 J (0.004)	ND (0.003)	0.0055 (0.003)	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	0.00079 J (0.005)	0.0017 J (0.005)	0.0018 J (0.05)	ND (0.05)	ND (0.05)	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	ND (0.001)	0.0019 (0.001)	ND (0.005)	ND (0.003)	0.0073 (0.003)	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	0.23 (0.005)	0.46 (0.005)	0.369 (0.015)	0.284 (0.015)	0.238 (0.015)	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.004)	ND (0.003)	0.002 J (0.003)	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	ND (0.005)	ND (0.005)	0.0007 J (0.05)	ND (0.05)	0.0009 J (0.05)	NA	NA	NA
Lead	0.005	0.0014 (0.00013)	0.00048 J (0.001)	ND (0.001)	ND (0.003)	ND (0.00013)	NA	NA	ND (0.005)	ND (0.003)	0.0066 (0.003)	0.00014 J (0.00013)	0.00014 J (0.00013)	NA
Manganese	0.3	NA	NA	NA	NA	NA	0.227 (0.005)	0.371 (0.005)	0.293 (0.015)	1.85 (0.015)	0.219 (0.015)	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-133D	B-133D	B-133D	B-134	B-134	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D	B-134D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/3/2016	8/25/2016	8/25/2016	1/9/2013	5/11/2016	5/31/2012	8/20/2012	11/2/2012	2/5/2013	4/1/2013	5/3/2016	5/3/2016	7/22/2021
Comments	MSC												Field Duplicate	

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-135	B-144	B-144	B-145	B-145	B-145	B-145	B-145	B-148	B-148	B-148	B-149	B-149
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/9/2013	1/8/2013	5/11/2016	5/26/2005	6/9/2006	1/8/2013	5/9/2016	8/24/2016	10/17/2002	11/19/2002	3/9/2023	10/17/2002	11/19/2002
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.0029 (0.001)	0.0775 (0.001)	0.13 (0.003)	0.038 (0.005)	0.043 (0.005)	0.018 (0.001)	0.006 (0.0005)	0.006 (0.001)	0.032 (0.005)	0.061 (0.005)	0.0021 SL (0.0005)	NA	NA
Cumene	3.5	0.0336 (0.002)	0.06 (0.002)	0.035 (0.003)	0.062 (0.005)	0.078 (0.005)	0.0588 (0.002)	0.077 (0.0005)	0.074 (0.002)	0.016 (0.005)	0.012 (0.005)	NA	2 (0.25)	1.8 (1)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.00002)	ND (0.0000097)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.0000099)	ND (0.000028)	NA	NA	NA	NA	NA
Ethyl Benzene	0.7	0.0032 (0.001)	0.101 (0.001)	0.26 (0.003)	ND (0.005)	ND (0.005)	0.0023 (0.001)	0.001 (0.0005)	0.001 (0.001)	ND (0.005)	0.007 (0.005)	ND,SL (0.001)	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.003)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	NA	ND (0.25)	ND (1)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0019 (0.001)	0.0356 (0.001)	0.074 (0.003)	0.005 (0.005)	ND (0.005)	0.0029 (0.001)	0.002 (0.0005)	0.002 (0.001)	0.005 (0.005)	ND (0.005)	0.0014 SL (0.001)	NA	NA
1,2,4-Trimethylbenzene	0.53	0.0043 (0.002)	0.212 (0.01)	0.46 (0.003)	NA	NA	0.0029 (0.002)	0.001 J (0.0005)	0.001 J (0.002)	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	0.002 (0.002)	0.0644 (0.002)	0.14 (0.003)	NA	NA	0.002 (0.002)	0.001 J (0.0005)	0.002 J (0.002)	NA	NA	NA	NA	NA
Xylenes (total)	10	0.0177 (0.001)	0.506 (0.005)	1.6 (0.003)	0.013 (0.005)	0.011 (0.005)	0.0081 (0.001)	0.006 (0.0005)	0.006 (0.001)	ND (0.005)	0.007 (0.005)	0.0016 SL (0.001)	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.00934 (0.001)	0.00027 (0.0001)	0.0054 (0.0001)	NA	NA	0.00492 (0.0001)	0.0074 (0.00001)	0.013 (0.00053)	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.00794 (0.001)	ND (0.0001)	0.002 (0.0001)	NA	NA	0.000397 (0.0001)	0.00068 (0.00001)	0.00067 (0.000053)	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	0.00402 (0.0001)	ND (0.0001)	0.0012 (0.0001)	NA	NA	0.000141 (0.0001)	0.00033 (0.00001)	0.00022 (0.000053)	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.00435 (0.0001)	ND (0.0001)	0.0016 (0.0001)	NA	NA	0.000137 (0.0001)	0.00036 (0.00001)	0.00024 (0.000053)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	0.00146 (0.0001)	ND (0.0001)	0.00042 J (0.0001)	NA	NA	ND (0.0001)	0.00011 (0.00001)	0.000071 (0.000053)	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00487 (0.0001)	ND (0.0001)	0.002 (0.0001)	ND (0.01)	ND (0.005)	0.000341 (0.0001)	0.00047 (0.00001)	0.00049 (0.000053)	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.0376 (0.001)	0.00214 (0.0001)	0.0011 (0.0001)	0.041 (0.01)	0.05 (0.005)	0.0194 (0.001)	0.034 (0.0001)	0.05 (0.00053)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.00186 (0.0001)	0.00401 (0.0001)	0.019 (0.0003)	0.011 (0.01)	0.011 (0.005)	0.0034 (0.0001)	0.0044 (0.00003)	0.0033 (0.000063)	ND (0.005)	ND (0.005)	NA	ND (0.25)	ND (1)
Phenanthrene	1.1	0.0327 (0.001)	0.000917 (0.0001)	0.0066 (0.0003)	0.024 (0.01)	0.043 (0.005)	0.0117 (0.001)	0.023 (0.0003)	0.041 (0.00063)	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0196 (0.001)	0.000123 (0.0001)	0.0043 (0.0001)	0.014 (0.01)	0.012 (0.005)	0.00279 (0.0001)	0.0042 (0.00001)	0.0054 (0.000053)	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.003)	0.0042 (0.003)	0.00024 J (0.00013)	NA	NA	0.0037 (0.003)	0.0007 J (0.00013)	0.00013 J (0.001)	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-135	B-144	B-144	B-145	B-145	B-145	B-145	B-145	B-148	B-148	B-148	B-149	B-149
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/9/2013	1/8/2013	5/11/2016	5/26/2005	6/9/2006	1/8/2013	5/9/2016	8/24/2016	10/17/2002	11/19/2002	3/9/2023	10/17/2002	11/19/2002
Comments	MSC													

J - Estimated Concentration
B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-149	B-149	B-149	B-149	B-149	B-150	B-150	B-150	B-150	B-150	B-150	B-150	B-151
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/25/2005	6/9/2006	1/7/2013	6/10/2022	6/10/2022	11/7/2019	5/5/2021	4/11/2022	4/11/2022	3/9/2023	12/5/2023	4/30/2024	6/8/2006
Comments	MSC					Field Duplicate				Field Duplicate				
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	140 (5)	79 (2.5)	47.4 (0.5)	0.0407 (0.001)	0.0346 (0.001)	NA	NA	352 SL (1)	316 SL (1)	330 SL (1.3)	240 (20)	335 SL (1.3)	ND (0.005)
Cumene	3.5	ND (5)	0.81 (0.25)	1.75 (0.4)	NA	NA	9.4 SL (1)	9 SL (0.5)	13.3 SL (2)	9.43 SL (2)	NA	NA	13.5 SL (0.25)	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	ND (0.00002)	NA	NA	ND,SL (0.000029)	ND,SL (0.00003)	ND,SL (0.00002)	ND,SL (0.00002)	NA	NA	ND,SL (0.00002)	ND (0.000029)
Ethyl Benzene	0.7	ND (5)	ND (0.25)	ND (0.2)	ND (0.001)	ND (0.001)	NA	NA	ND,SL (2)	ND,SL (2)	ND,SL (2.5)	0.536 (0.2)	0.619 SL (0.25)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (5)	ND (0.25)	ND (0.2)	NA	NA	ND,SL (0.2)	ND,SL (0.1)	ND,SL (2)	ND,SL (2)	NA	NA	ND,SL (0.25)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	ND,SL (5)	ND,SL (20)	ND,SL (20)	NA	NA	ND,SL (2.5)	NA
Toluene	1	ND (5)	2.2 (0.25)	0.357 (0.2)	0.0013 (0.001)	ND (0.001)	NA	NA	52.9 SL (2)	49.7 SL (2)	44.5 SL (2.5)	49.4 (20)	51.2 SL (2.5)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	NA	NA	ND (0.4)	NA	NA	0.082 J,SL (1)	ND,SL (0.5)	ND,SL (4)	ND,SL (4)	NA	NA	ND,SL (0.5)	NA
1,3,5-Trimethylbenzene	0.53	NA	NA	ND (0.4)	NA	NA	ND,SL (1)	ND,SL (0.5)	ND,SL (4)	ND,SL (4)	NA	NA	ND,SL (0.5)	NA
Xylenes (total)	10	ND (5)	ND (0.25)	ND (0.2)	ND (0.003)	ND (0.003)	NA	NA	1.28 J,SL (2)	ND,SL (2)	ND,SL (2.5)	2.04 (0.6)	2.24 SL (0.25)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	0.00133 (0.0001)	NA	NA	0.0006 SL (0.0005)	ND,SL (0.0005)	0.000602 SL (0.0004)	0.000404 SL (0.0004)	NA	NA	0.000629 SL (0.00016)	NA
Benzo(a)anthracene	0.0039	NA	NA	0.000193 (0.0001)	NA	NA	0.0004 J,SL (0.0005)	0.00024 J,SL (0.0005)	0.000223 SL (0.0002)	0.000132 J,SL (0.0002)	NA	NA	0.000598 SL (0.00008)	NA
Benzo(a)pyrene	0.0002	NA	NA	0.000122 (0.0001)	NA	NA	0.0003 J,SL (0.0005)	0.00022 J,SL (0.0005)	0.000203 SL (0.0002)	ND,SL (0.0002)	NA	NA	0.000315 SL (0.00008)	NA
Benzo(b)fluoranthene	0.0012	NA	NA	ND (0.0001)	NA	NA	0.0003 J,SL (0.0005)	0.00022 J,SL (0.0005)	0.000214 SL (0.0002)	ND,SL (0.0002)	NA	NA	0.000484 SL (0.00008)	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	ND (0.0001)	NA	NA	ND,SL (0.0005)	0.0001 J,SL (0.0005)	ND,SL (0.0004)	ND,SL (0.0004)	NA	NA	0.000309 SL (0.00016)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.01)	ND (0.005)	0.000141 (0.0001)	NA	NA	0.0004 J,SL (0.0005)	0.0002 J,SL (0.0005)	0.00023 J,SL (0.0004)	ND,SL (0.0004)	NA	NA	0.000524 SL (0.00016)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.01)	ND (0.005)	0.00466 (0.0001)	NA	NA	0.001 SL (0.0005)	0.0012 SL (0.0005)	0.000936 SL (0.0004)	0.00075 SL (0.0004)	NA	NA	0.00131 SL (0.00016)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.032 (0.01)	0.007 (0.005)	0.0277 (0.001)	NA	NA	0.046 SL (0.0005)	0.038 SL (0.0005)	0.0428 SL (0.002)	0.0438 SL (0.0008)	NA	NA	0.0478 SL (0.0016)	ND (0.005)
Phenanthrene	1.1	ND (0.01)	ND (0.005)	0.00735 (0.001)	NA	NA	0.003 SL (0.0005)	0.002 SL (0.0005)	0.00163 SL (0.0004)	0.0011 SL (0.0004)	NA	NA	0.00239 SL (0.00016)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.01)	ND (0.005)	0.00101 (0.0001)	NA	NA	0.0009 SL (0.0005)	0.00064 SL (0.0005)	0.000449 SL (0.0004)	0.000267 J,SL (0.0004)	NA	NA	0.000868 SL (0.00016)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	ND (0.003)	NA	NA	0.00087 SL (0.0005)	0.00017 J,SL (0.00052)	ND,SL (0.001)	ND,SL (0.001)	NA	NA	0.0014 SL (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-149	B-149	B-149	B-149	B-149	B-150	B-150	B-150	B-150	B-150	B-150	B-150	B-151
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/25/2005	6/9/2006	1/7/2013	6/10/2022	6/10/2022	11/7/2019	5/5/2021	4/11/2022	4/11/2022	3/9/2023	12/5/2023	4/30/2024	6/8/2006
Comments	MSC					Field Duplicate				Field Duplicate				

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-151	B-152	B-152	B-152	B-152	B-153	B-153	B-153	B-154	B-154	B-154	B-155	B-155
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/7/2013	6/9/2006	1/7/2013	5/9/2016	5/9/2016	6/9/2006	1/4/2013	5/4/2016	6/8/2006	1/7/2013	5/10/2016	6/8/2006	1/7/2013
Comments	MSC					Field Duplicate								
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.0152 (0.001)	0.078 (0.005)	0.0388 (0.001)	0.042 (0.0005)	0.039 (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	450 (10)	238 (5)	51 (1)	NA	NA
Cumene	3.5	0.0156 (0.002)	0.094 (0.005)	0.104 (0.002)	0.12 (0.0005)	0.11 (0.0005)	0.009 (0.005)	ND (0.002)	ND (0.0005)	ND (1)	ND (2)	0.15 J (0.1)	ND (1)	ND (1)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.000029)	ND (0.00002)	ND (0.0000097)	ND (0.0000097)	ND (0.000029)	ND (0.00002)	ND (0.0000095)	ND (0.000029)	ND (0.00002)	ND (0.0000095)	ND (0.000029)	ND (0.00002)
Ethyl Benzene	0.7	0.0013 (0.001)	ND (0.005)	0.0035 (0.001)	0.003 (0.0005)	0.003 (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (1)	ND (1)	ND (0.1)	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.005)	0.0016 (0.001)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (1)	ND (1)	ND (0.1)	ND (1)	ND (0.5)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0044 (0.001)	0.006 (0.005)	0.0168 (0.001)	0.016 (0.0005)	0.015 (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	6.2 (1)	1.1 (1)	0.18 J (0.1)	NA	NA
1,2,4-Trimethylbenzene	0.53	ND (0.002)	NA	0.006 (0.002)	0.005 (0.0005)	0.004 (0.0005)	NA	ND (0.002)	ND (0.0005)	NA	ND (2)	ND (0.1)	NA	ND (1)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	NA	0.0047 (0.002)	0.003 (0.0005)	0.003 (0.0005)	NA	ND (0.002)	ND (0.0005)	NA	ND (2)	ND (0.1)	NA	ND (1)
Xylenes (total)	10	0.0062 (0.001)	0.005 (0.005)	0.029 (0.001)	0.028 (0.0005)	0.025 (0.0005)	ND (0.005)	0.0014 (0.001)	ND (0.0005)	ND (1)	ND (1)	ND (0.1)	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.000522 (0.0001)	NA	0.00141 (0.0001)	0.0026 (0.00001)	0.0021 (0.00001)	NA	0.00019 (0.0001)	0.000099 (0.00001)	NA	0.0031 (0.0001)	0.0015 (0.00001)	NA	0.00174 (0.0001)
Benzo(a)anthracene	0.0039	ND (0.0001)	NA	ND (0.0001)	0.00012 (0.00001)	0.00014 (0.00001)	NA	ND (0.0001)	0.000052 (0.00001)	NA	ND (0.0001)	0.00012 (0.00001)	NA	ND (0.0001)
Benzo(a)pyrene	0.0002	ND (0.0001)	NA	ND (0.0001)	0.000088 (0.00001)	0.00011 (0.00001)	NA	ND (0.0001)	0.000038 J (0.00001)	NA	ND (0.0001)	0.0001 (0.00001)	NA	ND (0.0001)
Benzo(b)fluoranthene	0.0012	ND (0.0001)	NA	ND (0.0001)	0.00011 (0.00001)	0.00013 (0.00001)	NA	ND (0.0001)	0.00004 J (0.00001)	NA	ND (0.0001)	0.000084 (0.00001)	NA	ND (0.0001)
Benzo(g,h,i)perylene	0.00026	ND (0.0001)	NA	ND (0.0001)	0.000058 (0.00001)	0.000081 (0.00001)	NA	ND (0.0001)	0.000018 J (0.00001)	NA	ND (0.0001)	0.000054 (0.00001)	NA	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0001)	ND (0.005)	ND (0.0001)	0.00013 (0.00001)	0.00014 (0.00001)	ND (0.005)	ND (0.0001)	0.000058 (0.00001)	ND (0.005)	ND (0.0001)	0.000099 (0.00001)	ND (0.005)	ND (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00164 (0.0001)	0.007 (0.005)	0.00472 (0.0001)	0.0023 (0.00001)	0.0023 (0.00001)	ND (0.005)	0.000192 (0.0001)	0.000018 J (0.00001)	0.021 (0.005)	0.0158 (0.001)	0.007 (0.00001)	0.01 (0.005)	0.00674 (0.001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.000453 (0.0001)	ND (0.005)	0.00146 (0.0001)	ND (0.00003)	ND (0.00003)	ND (0.005)	0.000466 (0.0001)	ND (0.00003)	0.076 (0.005)	0.0573 (0.001)	0.02 (0.00031)	0.029 (0.005)	0.0524 (0.001)
Phenanthrene	1.1	0.000114 (0.0001)	ND (0.005)	0.0023 (0.0001)	0.0049 (0.00003)	0.0038 (0.00003)	ND (0.005)	ND (0.0001)	0.000043 J (0.00003)	0.018 (0.005)	0.017 (0.001)	0.0049 (0.000031)	0.014 (0.005)	0.00873 (0.001)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.000433 (0.0001)	ND (0.005)	0.00104 (0.0001)	0.0015 (0.00001)	0.0016 (0.00001)	ND (0.005)	0.000213 (0.0001)	0.00027 (0.00001)	ND (0.005)	0.000983 (0.0001)	0.00051 (0.00001)	ND (0.005)	0.000746 (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	ND (0.001)	NA	NA	NA	ND (0.001)	NA	NA	ND (0.001)	NA	NA	ND (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.003)	NA	ND (0.003)	ND (0.00013)	ND (0.00013)	NA	ND (0.003)	ND (0.00013)	NA	ND (0.003)	ND (0.00013)	NA	ND (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-151	B-152	B-152	B-152	B-152	B-153	B-153	B-153	B-154	B-154	B-154	B-155	B-155
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/7/2013	6/9/2006	1/7/2013	5/9/2016	5/9/2016	6/9/2006	1/4/2013	5/4/2016	6/8/2006	1/7/2013	5/10/2016	6/8/2006	1/7/2013
Comments	MSC					Field Duplicate								

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-155	B-155	B-155	B-155	B-155	B-155	B-156	B-156	B-156	B-156	B-156	B-156	B-157
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/5/2016	1/10/2022	6/10/2022	10/12/2022	11/9/2022	12/4/2023	6/8/2006	5/10/2016	6/28/2019	11/5/2019	5/5/2021	4/11/2022	6/9/2006
Comments	MSC													
Water Quality														
pH	--	NA	6.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	120 (1)	NA	131 (0.5)	12.8 (0.5)	165 (5)	15.1 (1)	NA	0.049 (0.0005)	0.099 (0.001)	0.091 (0.001)	0.21 SL (0.005)	0.105 SL (0.0005)	0.066 (0.005)
Cumene	3.5	0.079 J (0.025)	NA	NA	NA	NA	NA	NA	0.12 (0.0005)	0.11 (0.005)	0.12 (0.005)	0.1 SL (0.025)	0.141 SL (0.001)	0.006 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000097)	NA	NA	NA	NA	NA	NA	ND (0.0000097)	ND (0.000028)	ND (0.000028)	ND,SL (0.000029)	ND,SL (0.00002)	ND (0.000029)
Ethyl Benzene	0.7	0.12 (0.025)	NA	0.113 (0.001)	0.0284 (0.025)	ND (0.5)	0.043 (0.01)	NA	0.004 (0.0005)	0.006 (0.001)	0.007 (0.001)	0.0038 J,SL (0.005)	0.0034 SL (0.001)	0.014 (0.005)
Methyl tert-butyl ether	0.02	ND (0.025)	NA	NA	NA	NA	NA	NA	ND (0.0005)	ND (0.001)	ND (0.001)	ND,SL (0.005)	ND,SL (0.001)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.25)	0.0058 J,SL (0.01)	NA
Toluene	1	0.82 (0.025)	NA	0.124 (0.001)	ND (0.025)	1.67 (0.5)	0.0419 (0.01)	NA	0.013 (0.0005)	0.021 (0.001)	0.021 (0.001)	0.045 SL (0.005)	0.0166 SL (0.001)	0.04 (0.005)
1,2,4-Trimethylbenzene	0.53	0.062 J (0.025)	NA	NA	NA	NA	NA	NA	0.004 (0.0005)	0.007 (0.005)	0.012 (0.005)	ND,SL (0.025)	0.0034 SL (0.002)	NA
1,3,5-Trimethylbenzene	0.53	ND (0.025)	NA	NA	NA	NA	NA	NA	0.005 (0.0005)	0.006 (0.005)	0.01 (0.005)	0.0039 J,SL (0.025)	0.0052 SL (0.002)	NA
Xylenes (total)	10	0.15 (0.025)	NA	0.129 (0.003)	ND (0.075)	ND (1.5)	0.0475 (0.03)	NA	0.022 (0.0005)	0.03 (0.005)	0.037 (0.003)	0.021 J,SL (0.03)	0.0248 SL (0.001)	0.079 (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0037 (0.00001)	NA	NA	NA	NA	NA	NA	0.0047 (0.00001)	0.002 (0.0005)	0.001 (0.0005)	0.00057 SL (0.0005)	0.00208 SL (0.000074)	NA
Benzo(a)anthracene	0.0039	0.00031 (0.00001)	NA	NA	NA	NA	NA	NA	0.0017 (0.00001)	0.0003 J (0.0005)	ND (0.0005)	0.00045 J,SL (0.0005)	0.000432 SL (0.000037)	NA
Benzo(a)pyrene	0.0002	0.00025 (0.00001)	NA	NA	NA	NA	NA	NA	0.0014 (0.00001)	ND (0.0005)	ND (0.0005)	0.0003 J,SL (0.0005)	0.000268 SL (0.000037)	NA
Benzo(b)fluoranthene	0.0012	0.00024 (0.00001)	NA	NA	NA	NA	NA	NA	0.0015 (0.00001)	ND (0.0005)	ND (0.0005)	0.00029 J,SL (0.0005)	0.000279 SL (0.000037)	NA
Benzo(g,h,i)perylene	0.00026	0.000088 (0.00001)	NA	NA	NA	NA	NA	NA	0.0005 (0.00001)	ND (0.0005)	ND (0.0005)	ND,SL (0.0005)	0.000121 SL (0.000074)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00027 (0.00001)	NA	NA	NA	NA	NA	NA	0.0014 (0.00001)	0.0002 J (0.0005)	ND (0.0005)	0.00042 J,SL (0.0005)	0.000285 SL (0.000074)	0.006 (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.0066 (0.00001)	NA	NA	NA	NA	NA	NA	0.01 (0.00001)	0.007 (0.0005)	0.006 (0.0005)	0.0021 SL (0.0005)	0.008 SL (0.00074)	0.014 (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.042 (0.00061)	NA	NA	NA	NA	NA	NA	0.0033 (0.000031)	ND (0.0005)	ND (0.0005)	ND,SL (0.0005)	0.00171 SL (0.000074)	ND (0.005)
Phenanthrene	1.1	0.012 (0.00061)	NA	NA	NA	NA	NA	NA	0.017 (0.00031)	0.006 (0.0005)	0.004 (0.0005)	ND,SL (0.0005)	0.00338 SL (0.000074)	0.025 (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0013 (0.00001)	NA	NA	NA	NA	NA	NA	0.0034 (0.00001)	0.001 (0.0005)	0.0009 (0.0005)	0.0012 SL (0.0005)	0.00144 SL (0.000074)	0.02 (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	ND (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	0.0000082 (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	0.000014 (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	0.000019 (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	0.00001 (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	0.000018 (0.0000018)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	0.0166 (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.00013)	NA	NA	NA	NA	NA	NA	ND (0.00013)	ND (0.003)	0.00032 J (0.0005)	ND,SL (0.00052)	ND,SL (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-155	B-155	B-155	B-155	B-155	B-155	B-156	B-156	B-156	B-156	B-156	B-156	B-157
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/5/2016	1/10/2022	6/10/2022	10/12/2022	11/9/2022	12/4/2023	6/8/2006	5/10/2016	6/28/2019	11/5/2019	5/5/2021	4/11/2022	6/9/2006
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-158	B-158	B-158	B-158	B-158	B-158	B-158	B-158	B-159	B-160	B-160	B-160	B-162
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	6/8/2006	11/9/2010	4/8/2013	6/2/2014	5/20/2015	5/9/2016	8/22/2016	1/10/2022	6/8/2006	6/8/2006	1/7/2013	1/10/2022	8/10/2006
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	6.47	NA	NA	NA	6.21	NA
Volatile Organic Compounds														
Benzene	0.005	NA	NA	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.005)	ND (0.005)	ND (0.001)	NA	ND (0.025)
Cumene	3.5	NA	NA	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.0005)	ND (0.002)	NA	ND (0.005)	ND (0.005)	0.0029 (0.002)	NA	ND (0.025)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	NA	ND (0.00002)	ND (0.00002)	ND (0.000029)	ND (0.0000096)	ND (0.000028)	NA	ND (0.000029)	ND (0.000029)	ND (0.00002)	NA	ND (0.000028)
Ethyl Benzene	0.7	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.005)	ND (0.005)	0.0041 (0.001)	NA	ND (0.025)
Methyl tert-butyl ether	0.02	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.005)	ND (0.005)	ND (0.001)	NA	ND (0.025)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.005)	ND (0.005)	0.0017 (0.001)	NA	ND (0.025)
1,2,4-Trimethylbenzene	0.53	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.002)	NA	NA	NA	0.0079 (0.002)	NA	NA
1,3,5-Trimethylbenzene	0.53	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.002)	NA	NA	NA	0.0022 (0.002)	NA	NA
Xylenes (total)	10	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.005)	ND (0.005)	0.0153 (0.001)	NA	ND (0.025)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000027 J (0.00001)	0.000037 J (0.000051)	NA	NA	NA	ND (0.01)	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000058 (0.00001)	0.000055 (0.000051)	NA	NA	NA	ND (0.01)	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000045 J (0.00001)	0.000042 J (0.000051)	NA	NA	NA	ND (0.01)	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000051 (0.00001)	0.000046 J (0.000051)	NA	NA	NA	ND (0.01)	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000029 J (0.00001)	0.000027 J (0.000051)	NA	NA	NA	ND (0.01)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000051 (0.00001)	0.000045 J (0.000051)	NA	ND (0.005)	ND (0.005)	ND (0.01)	NA	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000064 (0.00001)	0.000094 (0.000051)	NA	0.009 (0.005)	ND (0.005)	ND (0.01)	NA	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.000042 J (0.00003)	0.000078 (0.000061)	NA	ND (0.005)	ND (0.005)	ND (0.01)	NA	ND (0.005)
Phenanthrene	1.1	NA	NA	ND (0.0001)	ND (0.0001)	ND (0.0005)	0.00004 J (0.00003)	0.000043 J (0.000061)	NA	ND (0.005)	ND (0.005)	ND (0.01)	NA	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	ND (0.0001)	0.000126 (0.0001)	0.0002 J (0.0005)	0.00022 (0.00001)	0.00031 (0.000051)	NA	ND (0.005)	ND (0.005)	ND (0.01)	NA	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	0.0000041 (0.0000018)	NA	NA	NA	0.000015 (0.0000019)	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	0.000004 (0.0000018)	NA	NA	NA	0.00014 (0.0000019)	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	ND (0.0000018)	NA	NA	NA	0.000019 (0.0000019)	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	0.0000088 (0.0000018)	NA	NA	NA	0.000081 (0.0000019)	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	0.0000055 (0.0000018)	NA	NA	NA	0.000008 (0.0000019)	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	0.0000071 (0.0000018)	NA	NA	NA	0.00018 (0.0000019)	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	ND	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	NA	NA	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	0.194	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	ND (0.003)	0.0017 J (0.003)	0.00014 J (0.001)	0.0012 (0.00013)	0.00089 J (0.001)	NA	NA	NA	ND (0.003)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-158	B-158	B-158	B-158	B-158	B-158	B-158	B-158	B-159	B-160	B-160	B-160	B-162
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	6/8/2006	11/9/2010	4/8/2013	6/2/2014	5/20/2015	5/9/2016	8/22/2016	1/10/2022	6/8/2006	6/8/2006	1/7/2013	1/10/2022	8/10/2006
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-162	B-162	B-163	B-163	B-163	B-164	B-164	B-164	B-164	B-164	B-165	B-165	B-165
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	1/4/2013	5/10/2016	6/9/2006	1/7/2013	5/10/2016	6/6/2006	1/8/2013	5/9/2016	8/23/2016	1/10/2022	5/5/2016	6/27/2019	11/4/2019
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.86	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.0005)	4.8 (0.25)	0.373 (0.005)	0.0009 J (0.0005)	ND (0.005)	0.0991 (0.001)	ND (0.0005)	0.001 (0.001)	NA	0.004 (0.0005)	0.013 (0.001)	ND (0.001)
Cumene	3.5	ND (0.002)	ND (0.0005)	ND (0.025)	0.0035 (0.002)	ND (0.0005)	0.007 (0.005)	0.0072 (0.002)	0.005 (0.0005)	0.005 (0.002)	NA	0.005 (0.0005)	0.0007 J (0.005)	0.006 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.0000094)	ND (0.000029)	ND (0.00002)	ND (0.0000096)	ND (0.000028)	ND (0.00002)	ND (0.0000096)	ND (0.000029)	NA	ND (0.0000096)	ND (0.000028)	ND (0.000028)
Ethyl Benzene	0.7	0.0017 (0.001)	ND (0.0005)	ND (0.025)	0.0018 (0.001)	ND (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.0005)	ND (0.001)	0.0008 J (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.0005)	ND (0.025)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	0.002 (0.0005)	0.0002 J (0.001)	0.0003 J (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.0005)	ND (0.025)	0.0064 (0.001)	ND (0.0005)	ND (0.005)	0.0017 (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.0005)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	0.0033 (0.002)	ND (0.0005)	NA	ND (0.002)	ND (0.0005)	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	ND (0.0005)	ND (0.005)	0.075 (0.005)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.0005)	NA	ND (0.002)	ND (0.0005)	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	ND (0.0005)	ND (0.005)	0.016 (0.005)
Xylenes (total)	10	0.0063 (0.001)	ND (0.0005)	ND (0.025)	0.0035 (0.001)	ND (0.0005)	ND (0.005)	0.0012 (0.001)	ND (0.0005)	ND (0.001)	NA	ND (0.0005)	ND (0.005)	0.017 (0.003)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.001)	0.00062 (0.00001)	NA	0.000156 (0.0001)	0.000044 J (0.00001)	NA	ND (0.0001)	0.000026 J (0.00001)	0.000057 (0.000053)	NA	0.00048 (0.00001)	0.0005 (0.0005)	0.0003 J (0.0005)
Benzo(a)anthracene	0.0039	ND (0.001)	0.00041 (0.00001)	NA	ND (0.0001)	0.000097 (0.00001)	NA	ND (0.0001)	0.000027 J (0.00001)	0.000017 J (0.000053)	NA	0.00017 (0.00001)	ND (0.0005)	ND (0.0005)
Benzo(a)pyrene	0.0002	ND (0.001)	0.00032 (0.00001)	NA	ND (0.0001)	0.00009 (0.00001)	NA	ND (0.0001)	0.000047 J (0.00001)	0.000019 J (0.000053)	NA	0.000039 J (0.00001)	ND (0.0005)	ND (0.0005)
Benzo(b)fluoranthene	0.0012	ND (0.001)	0.00034 (0.00001)	NA	ND (0.0001)	0.00017 (0.00001)	NA	ND (0.0001)	0.000049 J (0.00001)	0.000021 J (0.000053)	NA	0.00005 J (0.00001)	ND (0.0005)	ND (0.0005)
Benzo(g,h,i)perylene	0.00026	ND (0.001)	0.00017 (0.00001)	NA	ND (0.0001)	0.000064 (0.00001)	NA	ND (0.0001)	0.000035 J (0.00001)	0.000018 J (0.000053)	NA	0.000025 J (0.00001)	ND (0.0005)	ND (0.0005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.001)	0.00047 (0.00001)	ND (0.005)	ND (0.0001)	0.00013 (0.00001)	ND (0.005)	ND (0.0001)	0.000027 J (0.00001)	0.000013 J (0.000053)	NA	0.00013 (0.00001)	ND (0.0005)	ND (0.0005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00151 (0.001)	0.0014 (0.00001)	0.035 (0.005)	0.00824 (0.001)	0.0012 (0.00001)	ND (0.005)	0.000184 (0.0001)	0.000081 (0.00001)	0.000069 (0.000053)	NA	0.0014 (0.00001)	0.002 (0.0005)	0.002 (0.0005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.001)	0.00061 (0.00003)	ND (0.005)	0.000491 (0.0001)	ND (0.000031)	ND (0.005)	0.000304 (0.0001)	ND (0.000031)	0.000037 J (0.000063)	NA	ND (0.000031)	ND (0.0005)	0.011 (0.0005)
Phenanthrene	1.1	ND (0.001)	0.00056 (0.00003)	0.02 (0.005)	0.00017 (0.0001)	0.000037 J (0.000031)	ND (0.005)	ND (0.0001)	ND (0.000031)	0.000045 J (0.000063)	NA	0.00037 (0.000031)	ND (0.0005)	0.001 (0.0005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.001)	0.0011 (0.00001)	ND (0.005)	0.000177 (0.0001)	0.00027 (0.00001)	ND (0.005)	0.000123 (0.0001)	0.000043 J (0.00001)	0.000047 J (0.000053)	NA	0.0012 (0.00001)	0.001 (0.0005)	0.0006 (0.0005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000019)	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000018 (0.0000019)	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000019)	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000018 (0.0000019)	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000083 (0.0000019)	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000015 (0.0000019)	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	ND (0.001)	NA	NA	0.005 (0.001)	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.003)	0.00031 J (0.00013)	NA	ND (0.003)	ND (0.00013)	NA	ND (0.003)	0.0011 (0.00013)	0.0019 (0.001)	NA	0.001 (0.00013)	ND (0.003)	0.00053 (0.0005)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-162	B-162	B-163	B-163	B-163	B-164	B-164	B-164	B-164	B-164	B-165	B-165	B-165
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	1/4/2013	5/10/2016	6/9/2006	1/7/2013	5/10/2016	6/6/2006	1/8/2013	5/9/2016	8/23/2016	1/10/2022	5/5/2016	6/27/2019	11/4/2019
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-165	B-165	B-165	B-166	B-167	B-168	B-168	B-169	B-169	B-169	B-169	B-169	B-170
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	5/5/2021	1/10/2022	4/12/2022	1/7/2013	1/7/2013	1/4/2013	5/4/2016	8/22/2016	7/10/2019	11/4/2019	4/29/2021	4/12/2022	8/22/2016
Comments	MSC													
Water Quality														
pH	--	NA	6.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.007 (0.001)	NA	ND (0.0005)	ND (0.001)	0.0102 (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	0.003 (0.001)
Cumene	3.5	0.00028 J (0.005)	NA	0.0033 (0.001)	0.0021 (0.002)	0.0816 (0.002)	0.0038 (0.002)	0.002 J (0.0005)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)	0.005 (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	NA	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.0000094)	ND (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.00002)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	NA	ND (0.001)	0.0011 (0.001)	0.0039 (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	ND (0.05)	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	ND (0.01)	NA
Toluene	1	0.0005 J (0.001)	NA	ND (0.001)	ND (0.001)	0.0045 (0.001)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	0.0044 J (0.005)	NA	ND (0.002)	0.0023 (0.002)	0.004 (0.002)	ND (0.002)	ND (0.0005)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	0.0024 J (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)
Xylenes (total)	10	ND (0.006)	NA	ND (0.001)	0.0039 (0.001)	0.0174 (0.001)	0.002 (0.001)	0.0005 J (0.0005)	ND (0.001)	ND (0.005)	ND (0.003)	ND (0.006)	ND (0.001)	0.0007 J (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.00055)	NA	0.0000856 (0.00008)	ND (0.0001)	ND (0.0001)	0.000503 (0.0001)	0.00052 (0.00001)	ND (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.000089 (0.000077)	0.00026 (0.000057)
Benzo(a)anthracene	0.0039	ND (0.00055)	NA	0.000247 (0.00004)	ND (0.0001)	ND (0.0001)	0.000254 (0.0001)	0.000066 (0.00001)	0.000013 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.0000391 (0.000038)	0.000065 (0.000057)
Benzo(a)pyrene	0.0002	ND (0.00055)	NA	0.000254 (0.00004)	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.000037 J (0.00001)	0.000015 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.0000483 (0.000038)	0.000043 J (0.000057)
Benzo(b)fluoranthene	0.0012	ND (0.00055)	NA	0.00037 (0.00004)	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.000038 J (0.00001)	0.00002 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.000046 (0.000038)	0.000044 J (0.000057)
Benzo(g,h,i)perylene	0.00026	ND (0.00055)	NA	0.000254 (0.00008)	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.000016 J (0.00001)	0.000016 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	ND (0.000077)	0.00002 J (0.000057)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.00055)	NA	0.000313 (0.00008)	ND (0.0001)	ND (0.0001)	0.00019 (0.0001)	0.000063 (0.00001)	0.000017 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.0000561 J (0.000077)	0.000069 (0.000057)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.00055)	NA	0.0000534 J (0.00008)	0.00042 (0.0001)	0.000316 (0.0001)	0.00309 (0.0001)	0.0021 (0.00001)	ND (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.00019 (0.000077)	0.00061 (0.000057)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00055)	NA	0.0000865 (0.00008)	0.000438 (0.0001)	0.00208 (0.0001)	0.00138 (0.0001)	ND (0.00003)	ND (0.000069)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.0000644 J (0.000077)	ND (0.000068)
Phenanthrene	1.1	ND (0.00055)	NA	0.000273 (0.00008)	ND (0.0001)	0.000289 (0.0001)	0.000172 (0.0001)	0.00092 (0.00003)	ND (0.000069)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.000431 (0.000077)	0.00099 (0.000068)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00022 J (0.00055)	NA	0.000481 (0.00008)	0.000135 (0.0001)	ND (0.0001)	0.00107 (0.0001)	0.00041 (0.00001)	0.000035 J (0.000057)	ND (0.0005)	ND (0.0005)	ND (0.00055)	0.0000844 (0.000077)	0.00031 (0.000057)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	ND (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	0.000019 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	ND (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	0.0000045 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	0.0000017 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	0.000012 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.000073 J (0.00052)	NA	0.0023 (0.001)	ND (0.003)	ND (0.003)	ND (0.003)	ND (0.00013)	0.0065 (0.001)	ND (0.003)	0.0017 (0.0005)	0.0016 (0.00052)	ND (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-165	B-165	B-165	B-166	B-167	B-168	B-168	B-169	B-169	B-169	B-169	B-169	B-170
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	5/5/2021	1/10/2022	4/12/2022	1/7/2013	1/7/2013	1/4/2013	5/4/2016	8/22/2016	7/10/2019	11/4/2019	4/29/2021	4/12/2022	8/22/2016
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-170	B-170	B-170	B-170	B-172	B-172	B-172	B-172	B-172	B-173	B-173	B-173	B-174
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/10/2019	11/4/2019	4/29/2021	4/12/2022	8/23/2016	6/28/2019	11/5/2019	5/7/2021	4/12/2022	5/5/2016	8/23/2016	1/10/2022	5/5/2016
Comments	MSC					Field Duplicate								
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9	NA
Volatile Organic Compounds														
Benzene	0.005	0.002 (0.001)	0.001 (0.001)	0.00089 J (0.001)	0.0013 (0.0005)	0.16 (0.005)	ND (0.001)	ND (0.001)	0.0075 (0.001)	0.00049 J (0.0005)	0.014 (0.005)	0.017 (0.001)	NA	ND (0.0005)
Cumene	3.5	0.006 (0.005)	0.005 J (0.005)	0.0061 (0.005)	0.01 (0.001)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)	0.027 (0.005)	0.033 (0.002)	NA	ND (0.0005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.00002)	ND (0.000028)	ND (0.000028)	ND (0.000028)	ND (0.000028)	ND (0.00002)	0.00002 J (0.0000097)	ND (0.000028)	NA	ND (0.0000095)
Ethyl Benzene	0.7	0.0003 J (0.001)	0.0002 J (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	0.004 (0.001)	NA	ND (0.0005)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	0.0085 (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	NA	0.005 (0.0005)
tert Butyl alcohol	--	NA	NA	ND (0.05)	ND (0.01)	NA	NA	NA	ND (0.05)	ND (0.01)	NA	NA	NA	NA
Toluene	1	0.0004 J (0.001)	0.0004 J (0.001)	0.00039 J (0.001)	0.00068 J (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.005 J (0.005)	0.005 (0.001)	NA	ND (0.0005)
1,2,4-Trimethylbenzene	0.53	ND (0.005)	0.001 J (0.005)	ND (0.005)	ND (0.002)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.005)	0.005 (0.002)	NA	ND (0.0005)
1,3,5-Trimethylbenzene	0.53	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.01)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	0.013 J (0.005)	0.014 (0.002)	NA	ND (0.0005)
Xylenes (total)	10	0.001 J (0.005)	0.001 J (0.003)	ND (0.006)	0.0023 (0.001)	ND (0.005)	ND (0.005)	ND (0.003)	ND (0.006)	ND (0.001)	ND (0.005)	0.008 (0.001)	NA	ND (0.0005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0004 J (0.0005)	0.0003 J (0.0006)	0.00034 J (0.00056)	0.000289 (0.000074)	0.0001 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000598 J (0.00008)	0.006 (0.0001)	0.0061 (0.000051)	NA	0.000096 (0.00001)
Benzo(a)anthracene	0.0039	ND (0.0005)	ND (0.0006)	ND (0.00056)	0.0000509 (0.000037)	0.00013 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000701 (0.00004)	0.0021 (0.0001)	0.0012 (0.000051)	NA	0.000048 J (0.00001)
Benzo(a)pyrene	0.0002	ND (0.0005)	ND (0.0006)	ND (0.00056)	0.0000415 (0.000037)	0.000092 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000856 (0.00004)	0.001 (0.0001)	0.00051 J (0.000051)	NA	0.000032 J (0.00001)
Benzo(b)fluoranthene	0.0012	ND (0.0005)	ND (0.0006)	ND (0.00056)	0.000042 (0.000037)	0.000094 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000899 (0.00004)	0.001 (0.0001)	0.00055 J (0.000051)	NA	0.000038 J (0.00001)
Benzo(g,h,i)perylene	0.00026	ND (0.0005)	ND (0.0006)	ND (0.00056)	0.0000375 J (0.000074)	0.000041 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000612 J (0.00008)	0.00025 J (0.0001)	0.00012 J (0.000051)	NA	0.000015 J (0.00001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	ND (0.0006)	ND (0.00056)	0.0000412 J (0.000074)	0.00015 (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000679 J (0.00008)	0.0014 (0.0001)	0.0009 (0.000051)	NA	0.000042 J (0.00001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.004 (0.0005)	0.002 (0.0006)	0.0022 (0.00056)	0.00162 (0.000074)	0.00023 J (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	ND (0.00008)	0.016 (0.0001)	0.018 (0.00051)	NA	0.00025 (0.00001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.049 (0.0005)	0.015 (0.0006)	0.029 (0.00056)	0.0024 (0.00074)	ND (0.000064)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.00009 (0.00008)	0.013 (0.00031)	0.012 (0.00061)	NA	0.000099 (0.00003)
Phenanthrene	1.1	0.004 (0.0005)	0.002 (0.0006)	0.0011 (0.00056)	0.000139 (0.000074)	0.000036 J (0.000064)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.00006 J (0.00008)	0.023 (0.00031)	0.022 (0.00061)	NA	0.00043 (0.00003)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0002 J (0.0005)	ND (0.0006)	ND (0.00056)	0.000127 (0.000074)	0.00086 (0.000053)	ND (0.0005)	ND (0.0005)	ND (0.00056)	0.0000853 (0.00008)	0.0064 (0.0001)	0.0048 (0.000051)	NA	0.00019 (0.00001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00012 (0.000017)	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00013 (0.000017)	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0085 (0.00017)	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0031 (0.000017)	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0033 (0.00017)	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0028 (0.000017)	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.003)	0.000092 J (0.0005)	ND (0.00052)	ND (0.001)	0.00025 J (0.001)	ND (0.003)	0.0002 J (0.0005)	0.0001 J (0.00052)	ND (0.001)	0.00075 J (0.00013)	0.0014 (0.001)	NA	ND (0.00013)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-170	B-170	B-170	B-170	B-172	B-172	B-172	B-172	B-172	B-173	B-173	B-173	B-174
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/10/2019	11/4/2019	4/29/2021	4/12/2022	8/23/2016	6/28/2019	11/5/2019	5/7/2021	4/12/2022	5/5/2016	8/23/2016	1/10/2022	5/5/2016
Comments	MSC					Field Duplicate								

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-174	B-175	B-175	B-176	B-176	B-176	B-176	B-177	B-177	B-178	B-179	B-190	B-190
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	8/22/2016	5/11/2016	8/23/2016	2/20/2020	9/10/2020	12/15/2020	5/18/2022	2/20/2020	4/23/2024	2/19/2020	2/19/2020	10/12/2022	11/8/2022
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	0.26 (0.003)	0.065 (0.001)	0.141 (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	326 (1)	23.6 (0.1)	5.5 (0.05)	85.4 (0.5)	2.33 (0.1)	0.937 (0.1)
Cumene	3.5	ND (0.002)	0.15 (0.003)	0.063 (0.002)	0.0007 J (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	0.647 (0.005)	1.76 (0.05)	7.5 (0.05)	1.08 (0.05)	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.0000096)	ND (0.000028)	ND (0.000041)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.00004)	ND (0.00002)	ND (0.00004)	ND (0.00004)	NA	NA
Ethyl Benzene	0.7	ND (0.001)	0.025 (0.003)	0.005 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.556 (0.005)	0.181 (0.05)	0.0584 (0.001)	0.953 (0.05)	0.0285 (0.001)	ND (0.1)
Methyl tert-butyl ether	0.02	0.007 (0.001)	ND (0.003)	ND (0.001)	0.0014 (0.001)	0.0016 (0.001)	0.0014 (0.001)	0.0016 (0.001)	ND (0.005)	ND (0.05)	ND (0.001)	ND (0.001)	NA	NA
tert Butyl alcohol	--	NA	NA	NA	0.641 (0.005)	0.67 (0.05)	0.56 (0.05)	0.734 (0.01)	NA	ND (0.5)	NA	NA	NA	NA
Toluene	1	ND (0.001)	0.07 (0.003)	0.015 (0.001)	0.00072 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.528 (0.005)	0.0352 J (0.05)	0.0381 (0.001)	1.6 (0.05)	0.0263 (0.001)	ND (0.1)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	0.004 J (0.003)	0.002 J (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.002)	0.25 (0.005)	0.179 (0.1)	0.0132 (0.001)	1.23 (0.05)	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	0.051 (0.003)	0.01 (0.002)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.002)	0.105 (0.005)	0.148 (0.1)	0.0051 (0.001)	0.362 (0.001)	NA	NA
Xylenes (total)	10	ND (0.001)	0.033 (0.003)	0.011 (0.001)	ND (0.003)	ND (0.006)	ND (0.006)	ND (0.001)	1.43 (0.015)	0.189 (0.05)	0.141 (0.003)	1.58 (0.15)	0.0215 (0.003)	ND (0.3)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.000095 (0.000051)	0.0017 (0.00001)	0.00078 (0.000052)	NA	0.00036 J (0.00051)	0.00011 J,B (0.0005)	ND (0.00008)	NA	0.0133 (0.0004)	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.00008 (0.000051)	0.0013 (0.00001)	0.00036 (0.000052)	NA	0.00072 (0.00051)	ND (0.0005)	ND (0.00004)	NA	0.000919 B (0.00004)	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	0.00006 J (0.000051)	0.00089 (0.00001)	0.00022 J (0.000052)	NA	ND (0.00051)	ND (0.0005)	ND (0.00004)	NA	0.000216 (0.00004)	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.000065 J (0.000051)	0.0011 (0.00001)	0.00027 J (0.000052)	NA	0.0005 J (0.00051)	ND (0.0005)	ND (0.00004)	NA	0.000256 (0.00004)	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	0.000034 J (0.000051)	0.00038 (0.00001)	0.000096 J (0.000052)	NA	ND (0.00051)	ND (0.0005)	ND (0.00008)	NA	0.0001 (0.00008)	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000081 (0.000051)	0.0012 (0.00001)	0.00033 (0.000052)	NA	0.00024 J (0.00051)	ND (0.0005)	ND (0.00008)	NA	0.000435 (0.00008)	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00027 (0.000051)	0.0059 (0.00001)	0.0032 (0.000052)	NA	0.00065 (0.00051)	0.00023 J (0.0005)	ND (0.00008)	NA	0.0513 (0.004)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.000083 (0.000061)	ND (0.00003)	ND (0.000062)	NA	0.00034 J (0.00051)	ND (0.0005)	0.0000613 J (0.00008)	NA	0.191 (0.004)	NA	NA	NA	NA
Phenanthrene	1.1	0.00048 (0.000061)	0.0087 (0.00003)	0.0035 (0.000062)	NA	0.00064 (0.00051)	0.00011 J,B (0.0005)	ND (0.00008)	NA	0.0686 (0.004)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00033 (0.000051)	0.0023 (0.00001)	0.00093 (0.000052)	NA	0.00099 (0.00051)	0.0001 J,B (0.0005)	ND (0.00008)	NA	0.00633 (0.0004)	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.0019 (0.001)	0.0069 (0.00013)	0.0031 (0.001)	NA	ND (0.00052)	0.00018 J (0.00052)	ND (0.001)	NA	ND (0.001)	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-174	B-175	B-175	B-176	B-176	B-176	B-176	B-177	B-177	B-178	B-179	B-190	B-190
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	8/22/2016	5/11/2016	8/23/2016	2/20/2020	9/10/2020	12/15/2020	5/18/2022	2/20/2020	4/23/2024	2/19/2020	2/19/2020	10/12/2022	11/8/2022
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-190	B-190	B-191	B-191	B-191	B-192	B-192	B-192	B-193	B-193	B-193	B-193	B-194
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	11/8/2022	12/5/2023	10/12/2022	11/8/2022	12/5/2023	10/13/2022	11/9/2022	12/5/2023	10/12/2022	11/9/2022	3/10/2023	12/4/2023	10/12/2022
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.763 (0.1)	1.07 (0.1)	6.02 (0.2)	2.62 (0.2)	1.23 (0.05)	5.29 (0.05)	0.655 (0.05)	0.744 (0.1)	5.42 (0.1)	5.45 (0.1)	8.6 SL (0.05)	2.68 (0.2)	21.9 (0.5)
Cumene	3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	0.7	ND,OE,MI (0.1)	ND (0.1)	0.0477 (0.01)	ND (0.2)	ND (0.05)	0.282 (0.05)	0.134 (0.05)	0.168 (0.1)	0.436 (0.1)	0.445 (0.1)	0.368 SL (0.02)	0.35 (0.02)	0.301 (0.05)
Methyl tert-butyl ether	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND,OE (0.1)	ND (0.1)	0.0736 (0.01)	ND (0.2)	ND (0.05)	0.103 (0.05)	ND (0.05)	ND (0.1)	ND (0.1)	0.126 (0.1)	0.402 SL (0.02)	0.15 (0.02)	0.068 (0.05)
1,2,4-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	10	ND (0.3)	ND (0.3)	0.0571 (0.03)	ND (0.6)	ND (0.15)	0.242 (0.15)	ND (0.15)	ND (0.3)	0.395 (0.3)	0.367 (0.3)	0.341 SL (0.02)	0.46 (0.06)	0.372 (0.15)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-190	B-190	B-191	B-191	B-191	B-192	B-192	B-192	B-193	B-193	B-193	B-193	B-194
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	11/8/2022	12/5/2023	10/12/2022	11/8/2022	12/5/2023	10/13/2022	11/9/2022	12/5/2023	10/12/2022	11/9/2022	3/10/2023	12/4/2023	10/12/2022
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-194	B-194	B-194	B-194	B-195	B-195	B-195	B-39	B-39	B-39	B-39	B-39	B-43
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07
Sample Date	(TDS ≤ 2500)	11/9/2022	11/9/2022	3/10/2023	12/4/2023	10/12/2022	11/9/2022	12/4/2023	8/24/2016	8/24/2016	7/8/2019	11/4/2019	5/5/2021	6/27/2018
Comments	MSC		Field Duplicate											
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	14 (0.5)	14.5 (0.5)	6.85 SL (0.025)	2.52 (0.2)	29.9 (0.5)	17.7 (0.5)	3.72 (0.1)	0.004 (0.001)	0.003 (0.001)	0.005 SL (0.001)	0.002 SL (0.001)	0.0013 SL (0.001)	ND (0.001)
Cumene	3.5	NA	NA	NA	NA	NA	NA	NA	0.026 (0.002)	0.017 (0.002)	0.031 SL (0.005)	0.018 SL (0.005)	0.0093 SL (0.005)	0.00235 (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	NA	NA	NA	NA	NA	NA	0.000057 (0.000028)	ND (0.000028)	ND,SL (0.000028)	ND,SL (0.000028)	ND,SL (0.000029)	ND (0.00001)
Ethyl Benzene	0.7	ND (0.5)	ND (0.5)	0.167 SL (0.05)	ND (0.2)	0.103 (0.05)	ND (0.5)	ND (0.1)	ND (0.001)	ND (0.001)	0.0006 J,SL (0.001)	0.0004 J,SL (0.001)	ND,SL (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND,SL (0.05)	NA
Toluene	1	ND (0.5)	ND (0.5)	ND,SL (0.05)	ND (0.2)	ND (0.05)	ND (0.5)	ND (0.1)	0.002 (0.001)	0.002 (0.001)	0.003 SL (0.001)	0.002 SL (0.001)	0.0022 SL (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	NA	NA	0.001 J (0.002)	0.0006 J (0.002)	0.0004 J,SL (0.005)	0.0003 J,SL (0.005)	ND,SL (0.005)	ND (0.001)
1,3,5-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND,SL (0.005)	ND,SL (0.005)	0.0035 J,SL (0.005)	ND (0.001)
Xylenes (total)	10	ND (1.5)	ND (1.5)	0.11 SL (0.05)	ND (0.6)	0.16 (0.15)	ND (1.5)	ND (0.3)	0.005 (0.001)	0.004 (0.001)	0.005 J,SL (0.005)	0.003 SL (0.003)	0.0027 J,SL (0.006)	ND (0.003)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	NA	NA	0.0016 (0.000052)	0.00041 (0.000053)	0.004 SL (0.0005)	0.0008 SL (0.0005)	0.00091 SL (0.0005)	ND (0.00005)
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	NA	NA	0.00048 (0.000052)	0.000086 (0.000053)	0.002 SL (0.0005)	0.001 SL (0.0005)	0.00031 J,SL (0.0005)	0.000327 (0.00005)
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	NA	NA	0.00034 (0.000052)	0.000071 (0.000053)	0.001 SL (0.0005)	0.0009 SL (0.0005)	0.00028 J,SL (0.0005)	0.000253 (0.00005)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	NA	NA	0.00047 (0.000052)	0.000083 (0.000053)	0.002 SL (0.0005)	0.001 SL (0.0005)	0.00028 J,SL (0.0005)	0.000311 (0.00005)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	NA	NA	0.00016 (0.000052)	0.000057 (0.000053)	0.0007 SL (0.0005)	0.0004 J,SL (0.0005)	0.00012 J,SL (0.0005)	0.00016 (0.00005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	NA	NA	0.00043 (0.000052)	0.00009 (0.000053)	0.002 SL (0.0005)	0.001 SL (0.0005)	0.00033 J,SL (0.0005)	0.000326 (0.00005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	NA	NA	0.0055 (0.000052)	0.003 (0.000053)	0.009 SL (0.0005)	0.002 SL (0.0005)	0.0021 SL (0.0005)	ND (0.00005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	NA	NA	NA	NA	NA	NA	0.0044 (0.000063)	ND (0.000064)	0.002 SL (0.0005)	0.002 SL (0.0005)	ND,SL (0.0005)	ND (0.00025)
Phenanthrene	1.1	NA	NA	NA	NA	NA	NA	NA	0.006 (0.000063)	0.00086 (0.000064)	0.013 SL (0.0005)	0.0004 J,SL (0.0005)	ND,SL (0.0005)	ND (0.00005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	NA	NA	0.0011 (0.000052)	0.00035 (0.000053)	0.004 SL (0.0005)	0.002 SL (0.0005)	0.00089 SL (0.0005)	0.00152 (0.00005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	0.0021 (0.001)	0.0047 (0.001)	0.272 SL (0.015)	0.0064 SL (0.0005)	0.0004 J,SL (0.00052)	ND (0.002)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-194	B-194	B-194	B-194	B-195	B-195	B-195	B-39	B-39	B-39	B-39	B-39	B-43
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07
Sample Date	(TDS ≤ 2500)	11/9/2022	11/9/2022	3/10/2023	12/4/2023	10/12/2022	11/9/2022	12/4/2023	8/24/2016	8/24/2016	7/8/2019	11/4/2019	5/5/2021	6/27/2018
Comments	MSC		Field Duplicate											

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-43	B-43	B-43	B-43	B-45	B-45	B-45	B-45	B-45	B-45	B-45	B-46	B-46
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	6/27/2019	11/1/2019	5/4/2021	4/12/2022	5/25/2005	11/10/2005	6/8/2006	12/18/2007	11/4/2008	1/7/2013	5/5/2016	5/25/2005	6/7/2006
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.008 (0.001)	ND (0.001)	0.00031 J (0.001)	ND (0.0005)	NA	NA	ND (0.005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.005)
Cumene	3.5	0.003 J (0.005)	0.006 (0.005)	0.0064 (0.005)	0.0069 (0.001)	NA	NA	ND (0.005)	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.0005)	ND (0.005)	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.000021)	NA	NA	ND (0.000029)	ND (0.0000097)	ND (0.00003)	ND (0.00002)	ND (0.0000096)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	0.001 J (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.005)	NA	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.005)
tert Butyl alcohol	--	NA	NA	ND (0.05)	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0005 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	ND (0.005)	0.0008 J (0.005)	ND (0.005)	ND (0.002)	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0005)	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.0005)	NA	NA
Xylenes (total)	10	ND (0.005)	0.002 J (0.003)	ND (0.006)	ND (0.001)	NA	NA	ND (0.005)	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.0005)	ND (0.005)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.0005)	0.0007 (0.0005)	ND (0.00055)	0.000102 (0.000083)	NA	NA	NA	NA	NA	ND (0.0001)	0.000042 J (0.00001)	NA	NA
Benzo(a)anthracene	0.0039	ND (0.0005)	0.0002 J (0.0005)	ND (0.00055)	ND (0.000042)	NA	0.0002 (0.0002)	NA	ND	NA	ND (0.0001)	0.000021 J (0.00001)	NA	NA
Benzo(a)pyrene	0.0002	ND (0.0005)	0.0002 J (0.0005)	ND (0.00055)	0.0000268 J (0.000042)	NA	0.0002 (0.0002)	NA	ND	NA	ND (0.0001)	0.00003 J (0.00001)	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.0005)	0.0001 J (0.0005)	ND (0.00055)	ND (0.000042)	NA	0.0003 (0.0002)	NA	ND	NA	ND (0.0001)	0.000043 J (0.00001)	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.0005)	ND (0.0005)	ND (0.00055)	ND (0.000083)	NA	ND (0.0002)	NA	NA	NA	ND (0.0001)	0.000033 J (0.00001)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	0.0002 J (0.0005)	ND (0.00055)	ND (0.000083)	NA	NA	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.0001)	0.00005 J (0.00001)	ND (0.001)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.0005)	0.0009 (0.0005)	ND (0.00055)	0.0000754 J (0.000083)	NA	ND (0.0002)	ND (0.005)	ND (0.001)	NA	ND (0.0001)	0.000042 J (0.00001)	ND (0.001)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	ND (0.0002)	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.0005)	0.01 (0.0005)	ND (0.00055)	ND (0.000083)	NA	NA	ND (0.005)	ND (0.001)	ND (0.004)	ND (0.0001)	ND (0.000031)	ND (0.001)	ND (0.005)
Phenanthrene	1.1	ND (0.0005)	0.002 (0.0005)	ND (0.00055)	ND (0.000083)	NA	NA	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.0001)	0.000065 (0.000031)	ND (0.001)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Pyrene	0.13	0.0006 (0.0005)	0.001 (0.0005)	0.00051 J (0.00055)	0.000308 (0.000083)	NA	NA	ND (0.005)	ND (0.001)	ND (0.005)	0.000115 (0.0001)	0.000085 (0.00001)	ND (0.001)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	ND (0.001)	ND (0.01)	ND (0.001)	ND	NA	NA	NA	ND (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	0.194	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Lead	0.005	ND (0.003)	0.00045 J (0.0005)	ND (0.00052)	ND (0.001)	NA	NA	NA	ND (0.000047)	ND (0.000001)	ND (0.003)	0.00014 J (0.00013)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-43	B-43	B-43	B-43	B-45	B-45	B-45	B-45	B-45	B-45	B-45	B-46	B-46
Area	Used Aquifer	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07
Sample Date	(TDS ≤ 2500)	6/27/2019	11/1/2019	5/4/2021	4/12/2022	5/25/2005	11/10/2005	6/8/2006	12/18/2007	11/4/2008	1/7/2013	5/5/2016	5/25/2005	6/7/2006
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-46	B-48	B-48	B-48	B-48D	B-48D	B-48D	B-48D	B-48D	B-48D	B-48D	B-92	B-92
Area	Used Aquifer	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/7/2013	5/24/2005	6/8/2006	1/4/2013	6/1/2012	8/20/2012	11/2/2012	2/5/2013	4/1/2013	5/3/2016	7/22/2021	5/25/2005	6/7/2006
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.47	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	NA	ND (0.001)	ND (0.0005)	NA	ND (0.005)	ND (0.005)
Cumene	3.5	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	NA	0.009 (0.005)	0.007 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.000029)	ND (0.000028)	ND (0.00002)	ND (0.000029)	ND (0.000029)	ND (0.000014)	NA	ND (0.00002)	ND (0.0000096)	NA	ND (0.000029)	ND (0.000028)
Ethyl Benzene	0.7	0.002 (0.001)	ND (0.005)	ND (0.005)	0.002 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	NA	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	0.006 (0.001)	0.007 (0.001)	0.0062 (0.001)	NA	0.0062 (0.001)	0.012 (0.0005)	NA	ND (0.005)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	NA	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	0.0037 (0.002)	NA	NA	0.0037 (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	NA	ND (0.002)	ND (0.0005)	NA	NA	NA
Xylenes (total)	10	0.0073 (0.001)	ND (0.005)	ND (0.005)	0.0074 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.0005)	NA	ND (0.005)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.0001)	NA	NA	ND (0.001)	NA	0.0002 J (0.0005)	0.00036 B (0.0001)	NA	0.000262 (0.0001)	0.00042 (0.00001)	NA	NA	NA
Benzo(a)anthracene	0.0039	0.000175 (0.0001)	NA	NA	ND (0.001)	NA	ND (0.0005)	ND (0.00005)	NA	ND (0.0001)	0.000044 J (0.00001)	NA	NA	NA
Benzo(a)pyrene	0.0002	0.000177 (0.0001)	NA	NA	ND (0.001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00001)	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.000167 (0.0001)	NA	NA	ND (0.001)	NA	ND (0.0005)	ND (0.00005)	NA	ND (0.0001)	ND (0.00001)	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	0.00012 (0.0001)	NA	NA	ND (0.001)	NA	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	ND (0.00001)	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00019 (0.0001)	ND (0.01)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0001)	NA	ND (0.0001)	0.000034 J (0.00001)	NA	ND (0.01)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.000319 (0.0001)	ND (0.01)	0.006 (0.005)	0.00212 (0.001)	0.0009 (0.0005)	0.0003 J (0.0005)	0.0016 (0.0001)	NA	0.00107 (0.0001)	0.0023 (0.00001)	NA	0.022 (0.01)	0.024 (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.000914 (0.0001)	ND (0.01)	ND (0.005)	0.00144 (0.001)	ND (0.0005)	0.0002 J (0.0005)	0.00009 J (0.0001)	NA	ND (0.0001)	ND (0.00003)	NA	ND (0.01)	ND (0.005)
Phenanthrene	1.1	0.000219 (0.0001)	ND (0.01)	ND (0.005)	0.00126 (0.001)	0.0003 J (0.0005)	0.0006 (0.0005)	0.0021 (0.00005)	NA	0.00092 (0.0001)	0.0024 (0.00003)	NA	0.015 (0.01)	0.015 (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00053 (0.0001)	ND (0.01)	ND (0.005)	ND (0.001)	0.0003 J (0.0005)	0.0003 J (0.0005)	0.0003 B (0.0001)	NA	0.00027 (0.0001)	0.00043 (0.00001)	NA	ND (0.01)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000017)	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000037 (0.0000017)	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000036 (0.0000017)	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000043 (0.0000017)	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000082 (0.0000017)	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000023 (0.0000017)	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	0.0013 J (0.002)	0.0013 J (0.002)	ND (0.004)	ND (0.003)	0.0023 J (0.003)	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.05)	NA	NA	NA	NA
Lead	0.005	NA	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.003)	0.0064 (0.003)	NA	NA	ND (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	1.99 (0.005)	1.88 (0.005)	2.59 (0.015)	0.95 (0.015)	2.21 (0.015)	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.004)	ND (0.003)	0.0018 J (0.003)	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.05)	NA	NA	NA	NA
Lead	0.005	0.0042 (0.003)	NA	NA	ND (0.003)	NA	ND (0.001)	ND (0.005)	ND (0.003)	0.0052 (0.003)	ND (0.00013)	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	1.96 (0.005)	1.83 (0.005)	2.49 (0.015)	2.07 (0.015)	2.11 (0.015)	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-46	B-48	B-48	B-48	B-48D	B-48D	B-48D	B-48D	B-48D	B-48D	B-48D	B-92	B-92
Area	Used Aquifer	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/7/2013	5/24/2005	6/8/2006	1/4/2013	6/1/2012	8/20/2012	11/2/2012	2/5/2013	4/1/2013	5/3/2016	7/22/2021	5/25/2005	6/7/2006
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-92	B-94	B-94	B-94	B-95	B-95	C-104	C-104	C-104	C-104	C-104	C-104	C-104
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/8/2013	5/25/2005	6/9/2006	1/7/2013	6/8/2011	5/23/2016	1/1/1999	1/1/2000	1/1/2001	1/1/2002	11/13/2003	10/21/2004	11/9/2005
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Cumene	3.5	0.011 (0.002)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.0005)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.000028)	ND (0.000029)	ND (0.00002)	ND (0.0000099)	ND (0.000029)	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	0.7	0.001 (0.001)	ND (0.005)	ND (0.005)	0.0012 (0.001)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	0.034 (0.005)	0.02 (0.005)	0.0123 (0.001)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	0.53	0.0023 (0.002)	NA	NA	0.0025 (0.002)	ND (0.0005)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	NA	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	10	0.0048 (0.001)	ND (0.005)	ND (0.005)	0.0047 (0.001)	0.0005 J (0.0005)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.006 (0.001)	NA	NA	0.000154 (0.0001)	NA	ND (0.0005)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.00036 (0.0001)	NA	NA	ND (0.0001)	NA	0.0002 J (0.0005)	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	0.000133 (0.0001)	NA	NA	ND (0.0001)	NA	0.0003 J (0.0005)	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.0001)	NA	NA	ND (0.0001)	NA	0.0002 J (0.0005)	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.0001)	NA	NA	ND (0.0001)	NA	0.0002 J (0.0005)	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000315 (0.0001)	ND (0.01)	ND (0.005)	ND (0.0001)	0.00018 J (0.000079)	0.0004 J (0.0005)	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.004)	0.004	ND (0.002)	ND (0.002)	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.028 (0.001)	ND (0.01)	ND (0.005)	0.00116 (0.0001)	NA	ND (0.0005)	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.0001)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.00118 (0.0001)	ND (0.01)	ND (0.005)	0.000601 (0.0001)	ND (0.001)	ND (0.0005)	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1.1	0.0304 (0.001)	ND (0.01)	ND (0.005)	0.00118 (0.0001)	0.00018 J (0.000079)	ND (0.0005)	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	0.002	ND (0.003)	ND (0.003)	ND (0.001)	0.001 J	NA	NA
Pyrene	0.13	0.00291 (0.0001)	ND (0.01)	ND (0.005)	0.000384 (0.0001)	0.0012 (0.000099)	0.0007 (0.0005)	NA	NA	NA	NA	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.01)	0.297	0.039	1.72	NA	ND (0.01)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	0.052	ND (0.008)	ND (0.008)	ND (0.008)	0.517	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	1.7	0.36	0.885	0.158	12.4	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	0.098	ND (0.01)	0.086	ND (0.01)	0.419	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	0.019	ND (0.01)	0.019	ND (0.01)	ND (0.1)	NA	NA
Lead	0.005	0.0041 (0.003)	NA	NA	ND (0.003)	ND (0.000052)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	0.0876	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	B-92	B-94	B-94	B-94	B-95	B-95	C-104	C-104	C-104	C-104	C-104	C-104	C-104
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/8/2013	5/25/2005	6/9/2006	1/7/2013	6/8/2011	5/23/2016	1/1/1999	1/1/2000	1/1/2001	1/1/2002	11/13/2003	10/21/2004	11/9/2005
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-104	C-104	C-104	C-104	C-104	C-104	C-105	C-105	C-105	C-105	C-105	C-105	C-105
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	12/5/2006	5/21/2015	5/24/2016	7/26/2016	5/23/2017	6/26/2018	7/25/2016	1/18/2022	1/18/2022	4/29/2022	6/28/2022	5/9/2023	10/20/2023
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.0005)	NA	ND (0.0005)	NA
Cumene	3.5	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	NA	ND (0.001)	NA	0.0016 (0.001)	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	ND (0.005)	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.00001)	ND (0.000028)	ND (0.00004)	NA	ND (0.00002)	NA	ND (0.00002)	NA
Ethyl Benzene	0.7	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	NA
Methyl tert-butyl ether	0.02	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	NA	ND (0.01)	NA
Toluene	1	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	NA
1,2,4-Trimethylbenzene	0.53	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	NA	ND (0.002)	NA	ND (0.002)	NA
1,3,5-Trimethylbenzene	0.53	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.001)	NA	ND (0.002)	NA	ND (0.002)	NA
Xylenes (total)	10	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND (0.001)	ND (0.003)	NA	ND (0.001)	NA	ND (0.001)	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000708 B (0.000087)	0.000655 (0.00008)	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.000087)	ND (0.00008)	NA	NA
Anthracene	0.066	NA	0.001 (0.0005)	0.0005 J (0.0005)	0.00047 (0.000051)	0.0006 (0.0005)	0.00048 (0.00005)	NA	ND (0.00099)	NA	0.0000772 JB (0.000087)	0.0000742 J (0.00008)	0.0000655 J (0.000083)	NA
Benzo(a)anthracene	0.0039	NA	0.0008 (0.0005)	0.0001 J (0.0005)	0.00015 (0.000051)	0.0002 J (0.0005)	0.0000909 (0.00005)	NA	ND (0.00099)	NA	0.000138 B (0.000043)	ND (0.00004)	0.0000472 (0.000042)	NA
Benzo(a)pyrene	0.0002	NA	0.0006 (0.0005)	ND (0.0005)	0.000036 J (0.000051)	0.0002 J (0.0005)	ND (0.00005)	NA	ND (0.00099)	NA	ND (0.000043)	ND (0.00004)	ND (0.000042)	NA
Benzo(b)fluoranthene	0.0012	NA	0.0005 J (0.0005)	ND (0.0005)	0.000044 J (0.000051)	ND (0.0005)	ND (0.00005)	NA	ND (0.00099)	NA	0.0000274 J (0.000043)	ND (0.00004)	ND (0.000042)	NA
Benzo(g,h,i)perylene	0.00026	NA	0.0003 J (0.0005)	ND (0.0005)	0.000014 J (0.000051)	ND (0.0005)	ND (0.00005)	NA	ND (0.00099)	NA	ND (0.000087)	ND (0.00008)	ND (0.000083)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.000087)	ND (0.00008)	NA	NA
Chrysene	0.0019	NA	0.001 (0.0005)	0.0001 J (0.0005)	0.00017 (0.000051)	0.0003 J (0.0005)	0.000103 (0.00005)	NA	ND (0.00099)	NA	ND (0.000087)	ND (0.00008)	0.0000461 J (0.000083)	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.000087)	ND (0.00008)	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0043)	ND (0.004)	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000188 B (0.000087)	0.000197 (0.00008)	NA	NA
Fluorene	1.9	NA	0.007 (0.0005)	0.006 (0.0005)	0.0032 (0.000051)	0.005 (0.0005)	0.00339 (0.00005)	NA	0.00043 J (0.00099)	NA	0.000126 B (0.000087)	0.000127 (0.00008)	0.0000813 J (0.000083)	NA
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.000087)	ND (0.00008)	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0011)	ND (0.001)	NA	NA
Naphthalene	0.1	NA	0.0002 J (0.0005)	ND (0.0005)	ND (0.000061)	ND (0.0005)	ND (0.00025)	NA	ND (0.00099)	NA	ND (0.000087)	ND (0.00008)	ND (0.000083)	NA
Phenanthrene	1.1	NA	0.003 (0.0005)	0.0003 J (0.0005)	0.00025 (0.000061)	0.001 (0.0005)	0.000285 (0.00005)	NA	0.00052 J (0.00099)	NA	0.0000454 JB (0.000087)	0.0000769 J (0.00008)	ND (0.000083)	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0022)	ND (0.002)	NA	NA
Pyrene	0.13	NA	0.003 (0.0005)	0.002 (0.0005)	0.0019 (0.000051)	0.002 (0.0005)	0.00156 (0.00005)	NA	0.00048 J (0.00099)	NA	0.000188 (0.000087)	0.000178 (0.00008)	0.000175 (0.000083)	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0029 (0.002)
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	ND (0.001)	NA	NA	NA
Lead	0.005	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	0.00013 J (0.001)	NA	ND (0.003)	ND (0.001)	NA	ND (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)	ND (0.002)	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	0.0042 (0.002)	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.02)	ND (0.01)	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-104	C-104	C-104	C-104	C-104	C-104	C-105	C-105	C-105	C-105	C-105	C-105	C-105
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	12/5/2006	5/21/2015	5/24/2016	7/26/2016	5/23/2017	6/26/2018	7/25/2016	1/18/2022	1/18/2022	4/29/2022	6/28/2022	5/9/2023	10/20/2023
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-105	C-106	C-106	C-106	C-106	C-106	C-108	C-108	C-108	C-109	C-109	C-110	C-110
Area	Used Aquifer	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/22/2024	11/7/2019	5/10/2021	5/11/2022	5/8/2023	5/10/2024	1/12/2010	7/16/2010	7/28/2016	1/13/2010	7/13/2010	1/13/2010	7/27/2010
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.0005)	0.089 SL (0.001)	0.0011 SL (0.001)	ND,SL (0.0005)	ND,SL (0.0005)	ND,SL (0.0005)	0.0005 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Cumene	3.5	ND (0.001)	0.06 SL (0.005)	0.00044 J,SL (0.005)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND,SL (0.000028)	ND,SL (0.000028)	ND,SL (0.00002)	ND,SL (0.00002)	ND,SL (0.00002)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	0.0006 J,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	0.0006 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	ND (0.01)	NA	ND,SL (0.05)	ND,SL (0.01)	0.0064 J,SL (0.01)	0.0066 J,SL (0.01)	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	0.023 SL (0.001)	0.00068 J,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	0.0006 J,SL (0.005)	ND,SL (0.005)	ND,SL (0.002)	ND,SL (0.002)	ND,SL (0.002)	0.0007 J (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND,SL (0.005)	ND,SL (0.005)	ND,SL (0.002)	ND,SL (0.002)	ND,SL (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
Xylenes (total)	10	ND (0.001)	0.003 SL (0.003)	ND,SL (0.006)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	0.002 (0.001)	ND (0.001)	ND (0.001)	0.0007 J (0.001)	ND (0.001)	0.0006 J (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0000466 J (0.00008)	0.0003 J,SL (0.0005)	0.00023 J,SL (0.00051)	0.000283 SL (0.000077)	0.00018 SL (0.00008)	0.000173 SL (0.00008)	NA	NA	0.000073 (0.00005)	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	ND (0.00004)	0.0004 J,SL (0.0005)	ND,SL (0.00051)	0.00012 B,SL (0.000038)	0.000108 SL (0.00004)	0.000124 SL (0.00004)	NA	NA	0.000018 J (0.00005)	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND (0.00004)	0.0003 J,SL (0.0005)	ND,SL (0.00051)	0.0000728 B,SL (0.000038)	0.0000502 SL (0.00004)	0.0000252 J,SL (0.00004)	NA	NA	ND (0.00005)	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.00004)	0.0004 J,SL (0.0005)	ND,SL (0.00051)	0.000113 B,SL (0.000038)	0.000103 SL (0.00004)	0.000053 SL (0.00004)	NA	NA	0.000012 J (0.00005)	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.00008)	ND,SL (0.0005)	ND,SL (0.00051)	0.0000426 J,SL (0.000077)	0.0000801 SL (0.00008)	ND,SL (0.00008)	NA	NA	ND (0.00005)	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.00008)	0.0003 J,SL (0.0005)	ND,SL (0.00051)	0.000126 SL (0.000077)	0.000118 SL (0.00008)	0.000149 SL (0.00008)	ND (0.005)	ND (0.005)	0.000017 J (0.00005)	0.003 J (0.005)	0.001 J (0.005)	ND (0.005)	0.002 J (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.000213 (0.00008)	0.0008 SL (0.0005)	0.00062 SL (0.00051)	0.000864 SL (0.000077)	0.00063 SL (0.00008)	0.000536 SL (0.00008)	ND (0.005)	ND (0.005)	0.000076 (0.00005)	0.003 J (0.005)	0.002 J (0.005)	0.002 J (0.005)	0.002 J (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.0000419 J (0.00008)	0.0004 J,SL (0.0005)	ND,SL (0.00051)	ND,SL (0.000077)	0.0000914 SL (0.00008)	0.000137 SL (0.00008)	ND (0.005)	ND (0.005)	0.000054 J (0.00006)	0.002 J (0.005)	ND (0.005)	ND (0.005)	0.002 J (0.005)
Phenanthrene	1.1	ND (0.00008)	0.0007 SL (0.0005)	0.00079 SL (0.00051)	0.0013 SL (0.000077)	0.000174 SL (0.00008)	0.000359 SL (0.00008)	ND (0.005)	ND (0.005)	ND (0.00006)	0.003 J (0.005)	0.002 J (0.005)	0.004 J (0.005)	0.003 J (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.000146 (0.00008)	0.002 SL (0.0005)	0.00042 J,SL (0.00051)	0.000481 SL (0.000077)	0.000448 SL (0.00008)	0.000367 SL (0.00008)	ND (0.005)	ND (0.005)	0.000039 J (0.00005)	0.008 (0.005)	0.004 J (0.005)	0.003 J (0.005)	0.004 J (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	0.0015 SL (0.0005)	ND,SL (0.00052)	ND,SL (0.001)	ND,SL (0.001)	ND,SL (0.001)	0.000069 J (0.000001)	ND (0.000001)	0.00017 J (0.001)	0.000059 J (0.000001)	ND (0.000001)	ND (0.000001)	ND (0.000001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-105	C-106	C-106	C-106	C-106	C-106	C-108	C-108	C-108	C-109	C-109	C-110	C-110
Area	Used Aquifer	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/22/2024	11/7/2019	5/10/2021	5/11/2022	5/8/2023	5/10/2024	1/12/2010	7/16/2010	7/28/2016	1/13/2010	7/13/2010	1/13/2010	7/27/2010
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-111	C-111	C-112	C-112	C-112	C-113	C-113	C-113	C-114	C-114	C-127	C-127	C-127
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/13/2010	7/27/2010	1/13/2010	7/14/2010	7/29/2016	12/1/2009	7/13/2010	7/21/2016	1/14/2010	7/14/2010	1/1/1998	1/1/1999	1/1/2000
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.14 (0.001)	0.089 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	NA	NA	NA
Cumene	3.5	0.06 (0.002)	0.13 (0.002)	0.0009 J (0.002)	0.001 J (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0006 J (0.002)	0.0007 J (0.002)	NA	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.00003)	ND (0.000029)	NA	NA	NA
Ethyl Benzene	0.7	0.003 (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	NA	NA	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.016 (0.001)	NA	NA	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.017 (0.001)	0.015 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0009 J (0.002)	ND (0.002)	NA	NA	NA
1,3,5-Trimethylbenzene	0.53	0.002 J (0.002)	0.003 (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	NA
Xylenes (total)	10	0.013 (0.001)	0.012 (0.001)	0.0008 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.003 (0.001)	ND (0.001)	NA	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	0.00013 (0.000051)	NA	NA	0.000061 (0.000051)	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	0.000098 (0.000051)	NA	NA	0.000034 J (0.000051)	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	0.000069 (0.000051)	NA	NA	0.000017 J (0.000051)	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	0.000078 (0.000051)	NA	NA	0.000018 J (0.000051)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	0.000022 J (0.000051)	NA	NA	0.000011 J (0.000051)	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.004 J (0.005)	0.003 J (0.005)	ND (0.05)	0.003 J (0.005)	0.0001 (0.000051)	ND (0.005)	ND (0.005)	0.000034 J (0.000051)	ND (0.005)	0.002 J (0.005)	NA	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.004)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.004 J (0.005)	0.002 J (0.005)	0.02 J (0.05)	0.013 (0.005)	0.00068 (0.000051)	ND (0.005)	0.003 J (0.005)	0.000057 (0.000051)	ND (0.005)	0.005 (0.005)	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.003 J (0.005)	0.002 J (0.005)	ND (0.05)	0.001 J (0.005)	0.000079 (0.000061)	ND (0.005)	ND (0.005)	ND (0.000061)	ND (0.005)	0.002 J (0.005)	NA	NA	NA
Phenanthrene	1.1	0.009 (0.005)	0.007 (0.005)	0.026 J (0.05)	0.019 (0.005)	0.00025 (0.000061)	ND (0.005)	0.004 J (0.005)	0.00017 (0.000061)	ND (0.005)	0.005 J (0.005)	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.003)
Pyrene	0.13	0.008 (0.005)	0.007 (0.005)	0.024 J (0.05)	0.009 (0.005)	0.00038 (0.000051)	ND (0.005)	0.003 J (0.005)	0.00015 (0.000051)	ND (0.005)	0.005 (0.005)	NA	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5	0.026
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	0.079	ND (0.008)
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4	1.4	0.599
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38	0.19	ND (0.01)
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.12	0.06	ND (0.01)
Lead	0.005	0.00089 J (0.000001)	0.0013 (0.000001)	ND (0.000001)	ND (0.000001)	ND (0.001)	ND (0.001)	ND (0.000001)	ND (0.001)	0.00015 J (0.000001)	ND (0.000001)	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.02)	ND (0.02)	ND (0.02)
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-111	C-111	C-112	C-112	C-112	C-113	C-113	C-113	C-114	C-114	C-127	C-127	C-127
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/13/2010	7/27/2010	1/13/2010	7/14/2010	7/29/2016	12/1/2009	7/13/2010	7/21/2016	1/14/2010	7/14/2010	1/1/1998	1/1/1999	1/1/2000
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-130	C-130	C-131
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/1/2001	11/13/2003	10/21/2004	11/9/2005	12/5/2006	5/21/2015	5/24/2016	7/26/2016	5/23/2017	6/26/2018	7/12/2010	7/25/2016	7/15/2010
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Cumene	3.5	NA	NA	NA	NA	NA	0.002 (0.002)	0.004 (0.002)	0.006 (0.002)	0.003 (0.002)	0.00137 (0.001)	ND (0.002)	ND (0.002)	0.001 J (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	NA	NA	NA	NA	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000028)	ND (0.00001)	ND (0.000029)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	NA	NA	NA	NA	NA	0.006 (0.001)	0.005 (0.001)	0.005 (0.001)	0.005 (0.001)	0.00411 (0.001)	ND (0.001)	ND (0.001)	0.007 (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	NA	NA	NA	NA	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)
Xylenes (total)	10	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND (0.001)	ND (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	0.0005 J (0.0005)	0.0004 J (0.0005)	0.00059 (0.000052)	0.0005 J (0.0005)	0.000456 (0.00005)	NA	ND (0.00005)	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	0.0001 J (0.0005)	0.0001 J (0.0005)	0.00011 (0.000052)	ND (0.0005)	0.0000591 (0.00005)	NA	ND (0.00005)	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	ND (0.0005)	0.0001 J (0.0005)	0.000079 (0.000052)	ND (0.0005)	ND (0.00005)	NA	ND (0.00005)	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	ND (0.0005)	ND (0.0005)	0.000058 (0.000052)	ND (0.0005)	ND (0.00005)	NA	0.000014 J (0.00005)	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	ND (0.0005)	0.0006 (0.0005)	0.00036 (0.000052)	ND (0.0005)	ND (0.00005)	NA	ND (0.00005)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	NA	0.0002 J (0.0005)	ND (0.0005)	0.00013 (0.000052)	ND (0.0005)	0.000088 (0.00005)	ND (0.005)	0.000012 J (0.00005)	0.038 J (0.05)
Dibenz(a,h)anthracene	0.0006	ND (0.004)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	NA	0.004 (0.0005)	0.003 (0.0005)	0.0011 (0.000052)	0.003 (0.0005)	0.00314 (0.00005)	ND (0.005)	ND (0.00005)	0.03 J (0.05)
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.0001)	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	NA	NA	NA	NA	ND (0.0005)	ND (0.0005)	ND (0.000063)	ND (0.0005)	ND (0.00025)	ND (0.005)	ND (0.00006)	0.036 J (0.05)
Phenanthrene	1.1	NA	NA	NA	NA	NA	0.0001 J (0.0005)	0.0003 J (0.0005)	0.0003 (0.000063)	0.0001 J (0.0005)	ND (0.00005)	ND (0.005)	ND (0.00006)	0.1 (0.05)
bis(2-Ethylhexyl)phthalate	0.006	ND (0.003)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	NA	0.001 (0.0005)	0.0007 (0.0005)	0.00092 (0.000052)	0.0009 (0.0005)	0.00107 (0.00005)	ND (0.005)	0.000011 J (0.00005)	0.078 (0.05)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	1.83	0.033 J	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	0.045	ND (0.008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	1.66	0.685	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	0.201	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	0.075	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.000001)	ND (0.001)	0.0007 J (0.000001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	ND (0.02)	ND (0.02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-127	C-130	C-130	C-131
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/1/2001	11/13/2003	10/21/2004	11/9/2005	12/5/2006	5/21/2015	5/24/2016	7/26/2016	5/23/2017	6/26/2018	7/12/2010	7/25/2016	7/15/2010
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-131	C-131	C-132	C-132	C-133	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/26/2016	8/19/2016	7/15/2010	7/25/2016	7/15/2010	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/2/2012	4/1/2013	8/19/2016	6/27/2019
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	ND (0.001)	0.002 (0.001)
Cumene	3.5	ND (0.002)	ND (0.002)	0.028 (0.002)	0.0007 J (0.002)	0.0007 J (0.002)	NA	NA	NA	NA	NA	NA	ND (0.002)	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.000029)	NA	NA	NA	NA	NA	NA	ND (0.000028)	ND (0.000028)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	0.0007 J (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	0.013 (0.001)	0.011 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	ND (0.001)	0.0003 J (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.025)
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	0.0007 J (0.002)	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA	ND (0.002)	ND (0.005)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA	ND (0.002)	ND (0.005)
Xylenes (total)	10	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0014 (0.00005)	0.00032 (0.00005)	NA	0.000082 (0.00005)	NA	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Benzo(a)anthracene	0.0039	0.00061 (0.00005)	0.000034 J (0.00005)	NA	0.000061 (0.00005)	NA	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Benzo(a)pyrene	0.0002	0.00043 (0.00005)	ND (0.00005)	NA	0.000031 J (0.00005)	NA	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Benzo(b)fluoranthene	0.0012	0.00042 (0.00005)	0.000012 J (0.00005)	NA	0.000044 J (0.00005)	NA	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Benzo(g,h,i)perylene	0.00026	0.00023 (0.00005)	ND (0.00005)	NA	0.000024 J (0.00005)	NA	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.00067 (0.00005)	0.000044 J (0.00005)	ND (0.005)	0.000077 (0.00005)	0.008 (0.005)	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.0039 (0.00005)	0.00067 (0.00005)	0.003 J (0.005)	0.000074 (0.00005)	0.008 (0.005)	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.00065 (0.00006)	0.000072 (0.00006)	ND (0.005)	0.000038 J (0.00006)	0.008 (0.005)	NA	NA	NA	NA	NA	NA	ND (0.00006)	ND (0.0005)
Phenanthrene	1.1	0.00063 (0.00006)	0.00015 (0.00006)	ND (0.005)	0.000041 J (0.00006)	0.017 (0.005)	NA	NA	NA	NA	NA	NA	ND (0.00006)	ND (0.0005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0021 (0.00005)	0.00031 (0.00005)	0.002 J (0.005)	0.00059 (0.00005)	0.017 (0.005)	NA	NA	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	0.0058 (0.002)	NA	0.0022 (0.002)	0.0045 (0.002)	0.0063 (0.004)	0.0049 (0.003)	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	0.00076 J (0.005)	NA	ND (0.005)	ND (0.005)	0.0005 J (0.05)	ND (0.05)	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	0.00016 J (0.001)	NA	ND (0.001)	0.000067 J (0.001)	ND (0.005)	0.0057 (0.003)	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	0.043 (0.005)	NA	0.823 (0.005)	0.717 (0.005)	1.49 (0.015)	0.785 (0.015)	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	0.0023 (0.002)	ND (0.002)	ND (0.002)	ND (0.004)	0.0021 J (0.003)	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.005)	0.0004 J (0.05)	ND (0.05)	NA	NA
Lead	0.005	ND (0.001)	ND (0.001)	0.00011 J (0.000001)	ND (0.001)	0.00014 J (0.000001)	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	ND (0.005)	0.778 (0.005)	0.66 (0.005)	1.36 (0.015)	0.711 (0.015)	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-131	C-131	C-132	C-132	C-133	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D	C-134D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/26/2016	8/19/2016	7/15/2010	7/25/2016	7/15/2010	7/1/2011	7/1/2011	5/31/2012	8/20/2012	11/2/2012	4/1/2013	8/19/2016	6/27/2019
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-134D	C-134D	C-134D	C-134D	C-136	C-137	C-138	C-140	C-140	C-142	C-142	C-144D	C-144D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	10/29/2019	4/30/2021	7/22/2021	4/22/2022	7/29/2016	7/15/2010	7/16/2010	7/20/2010	7/26/2016	7/20/2010	7/28/2016	7/5/2011	7/5/2011
Comments	MSC													
Water Quality														
pH	--	NA	NA	6.57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.004 (0.001)	ND (0.001)	NA	ND (0.0005)	ND (0.001)	0.0008 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	NA	NA
Cumene	3.5	ND (0.005)	ND (0.005)	NA	ND (0.001)	0.0005 J (0.002)	0.004 (0.002)	ND (0.002)	0.002 (0.002)	ND (0.002)	0.078 (0.02)	0.13 (0.002)	NA	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	NA	ND (0.000021)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	NA	NA
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	NA	NA
Methyl tert-butyl ether	0.02	0.0003 J (0.001)	ND (0.001)	NA	0.00092 J (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	NA	NA
tert Butyl alcohol	--	ND (0.025)	ND (0.05)	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	0.0006 J (0.001)	NA	NA
1,2,4-Trimethylbenzene	0.53	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.003 (0.002)	ND (0.002)	ND (0.02)	ND (0.002)	NA	NA
1,3,5-Trimethylbenzene	0.53	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0008 J (0.002)	ND (0.002)	ND (0.02)	ND (0.002)	NA	NA
Xylenes (total)	10	ND (0.003)	ND (0.006)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.002 (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	NA	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.0005)	ND (0.00055)	NA	ND (0.000067)	0.00008 (0.000051)	NA	NA	NA	0.00015 (0.000051)	NA	0.00061 (0.000051)	NA	NA
Benzo(a)anthracene	0.0039	ND (0.0005)	ND (0.00055)	NA	ND (0.000033)	0.000058 (0.000051)	NA	NA	NA	0.000037 J (0.000051)	NA	0.00017 (0.000051)	NA	NA
Benzo(a)pyrene	0.0002	ND (0.0005)	ND (0.00055)	NA	ND (0.000033)	0.000026 J (0.000051)	NA	NA	NA	0.000026 J (0.000051)	NA	0.00014 (0.000051)	NA	NA
Benzo(b)fluoranthene	0.0012	ND (0.0005)	ND (0.00055)	NA	ND (0.000033)	0.000029 J (0.000051)	NA	NA	NA	0.000031 J (0.000051)	NA	0.000092 (0.000051)	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.0005)	ND (0.00055)	NA	ND (0.000067)	ND (0.000051)	NA	NA	NA	0.00002 J (0.000051)	NA	0.000064 (0.000051)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	ND (0.00055)	NA	ND (0.000067)	0.000063 (0.000051)	ND (0.005)	ND (0.005)	0.002 J (0.005)	0.000035 J (0.000051)	0.064 (0.052)	0.00033 (0.000051)	NA	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.0005)	ND (0.00055)	NA	ND (0.000067)	0.00025 (0.000051)	0.001 J (0.005)	ND (0.005)	0.004 J (0.005)	0.0013 (0.000051)	0.039 J (0.052)	0.0012 (0.000051)	NA	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.0005)	ND (0.00055)	NA	ND (0.000067)	ND (0.000061)	ND (0.005)	ND (0.005)	ND (0.005)	0.00034 (0.000062)	0.032 J (0.052)	0.00027 (0.000061)	NA	NA
Phenanthrene	1.1	ND (0.0005)	ND (0.00055)	NA	0.0000559 J (0.000067)	ND (0.000061)	0.005 J (0.005)	ND (0.005)	ND (0.005)	0.0003 (0.000062)	0.14 (0.052)	0.00038 (0.000061)	NA	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.0005)	ND (0.00055)	NA	0.0000475 J (0.000067)	0.00033 (0.000051)	ND (0.005)	ND (0.005)	0.006 (0.005)	0.00035 (0.000051)	0.11 (0.052)	0.00038 (0.000051)	NA	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	0.0000036 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	0.000032 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	0.0000024 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	0.000023 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	0.0000077 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	0.000041 (0.0000017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0025 (0.002)	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0011 J (0.005)	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00084 J (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.54 (0.005)	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.002)
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.005)
Lead	0.005	ND (0.0005)	0.00013 J (0.00052)	NA	ND (0.001)	ND (0.001)	ND (0.000001)	0.001 (0.000001)	0.000098 J (0.000001)	0.00053 J (0.001)	0.00096 J (0.000001)	0.00017 J (0.001)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.49 (0.005)
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-134D	C-134D	C-134D	C-134D	C-136	C-137	C-138	C-140	C-140	C-142	C-142	C-144D	C-144D
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	10/29/2019	4/30/2021	7/22/2021	4/22/2022	7/29/2016	7/15/2010	7/16/2010	7/20/2010	7/26/2016	7/20/2010	7/28/2016	7/5/2011	7/5/2011
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-145	C-145	C-146
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/31/2012	8/21/2012	11/1/2012	4/2/2013	7/20/2016	7/11/2019	10/30/2019	4/30/2021	7/22/2021	5/11/2022	1/13/2012	7/27/2016	7/9/2019
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	6.27	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	0.00069 J (0.001)	NA	ND (0.0005)	ND (0.001)	ND (0.001)	0.0004 J (0.001)
Cumene	3.5	NA	NA	NA	NA	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	NA	ND (0.001)	ND (0.002)	ND (0.002)	0.019 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	NA	NA	NA	ND (0.000029)	ND (0.000028)	ND (0.000028)	ND (0.000029)	NA	ND (0.000021)	ND (0.000029)	ND (0.000029)	ND (0.000028)
Ethyl Benzene	0.7	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	ND (0.025)	ND (0.025)	ND (0.05)	NA	ND (0.01)	NA	NA	NA
Toluene	1	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	NA	NA	NA	NA	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	0.0006 J (0.005)
1,3,5-Trimethylbenzene	0.53	NA	NA	NA	NA	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)
Xylenes (total)	10	NA	NA	NA	NA	ND (0.001)	ND (0.005)	ND (0.003)	ND (0.006)	NA	ND (0.001)	0.003 (0.001)	ND (0.001)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000077)	NA	0.00045 (0.000051)	0.014 (0.0005)
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000038)	NA	0.00053 (0.000051)	0.012 (0.0005)
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000038)	NA	0.0004 (0.000051)	0.009 (0.0005)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000038)	NA	0.00045 (0.000051)	0.01 (0.0005)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000077)	NA	0.00018 (0.000051)	0.003 (0.0005)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000077)	0.0007 (0.0005)	0.00068 (0.000051)	0.015 (0.0005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000077)	ND (0.0005)	0.00022 (0.000051)	0.022 (0.0005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	NA	NA	NA	ND (0.00006)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	0.0000484 J (0.000077)	ND (0.0005)	0.00053 (0.000061)	0.009 (0.0005)
Phenanthrene	1.1	NA	NA	NA	NA	ND (0.00006)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	0.0000455 J (0.000077)	ND (0.0005)	0.00046 (0.000061)	0.072 (0.0005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	NA	NA	NA	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00054)	NA	ND (0.000077)	0.001 (0.0005)	0.0015 (0.000051)	0.034 (0.0005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000016)	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	0.000012 (0.0000016)	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000016)	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0000057 (0.0000016)	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000016)	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	0.000019 (0.0000016)	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	0.004 (0.002)	0.0032 (0.002)	ND (0.004)	0.0106 (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	0.0075 (0.005)	0.0017 J (0.005)	0.0009 J (0.05)	0.0017 J (0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.01 (0.001)	0.0016 (0.001)	0.0046 J (0.005)	ND (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	1.79 (0.005)	1.2 (0.005)	1.47 (0.015)	0.0959 (0.015)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	ND (0.002)	ND (0.002)	ND (0.004)	0.0019 J (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	ND (0.005)	ND (0.005)	0.0008 J (0.05)	0.0016 J (0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	ND (0.001)	ND (0.003)	ND (0.0005)	ND (0.00052)	NA	ND (0.001)	ND (0.001)	0.00019 J (0.001)	ND (0.003)
Manganese	0.3	1.57 (0.005)	1.17 (0.005)	1.45 (0.015)	0.0849 (0.015)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-144D	C-145	C-145	C-146
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/31/2012	8/21/2012	11/1/2012	4/2/2013	7/20/2016	7/11/2019	10/30/2019	4/30/2021	7/22/2021	5/11/2022	1/13/2012	7/27/2016	7/9/2019
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-146	C-146	C-146	C-146	C-150	C-150	C-152	C-152	C-155	C-156	C-157	C-157	C-158
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	11/7/2019	5/11/2022	5/16/2023	4/24/2024	8/1/2016	5/14/2021	7/29/2016	8/19/2016	1/12/2012	1/12/2012	1/12/2012	7/28/2016	1/12/2012
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.0004 J (0.001)	ND,SL (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.001)	ND,SL (0.001)	0.051 (0.001)	0.002 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Cumene	3.5	0.014 (0.005)	0.0091 SL (0.001)	0.0072 (0.001)	0.0059 (0.001)	0.059 (0.002)	0.0025 J,SL (0.005)	0.015 (0.002)	0.003 (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND,SL (0.000021)	ND (0.000021)	ND (0.00002)	ND (0.000028)	ND,SL (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	0.016 (0.001)	0.00091 J,SL (0.001)	0.003 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	0.0002 J (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	0.0333 SL (0.01)	0.0297 (0.01)	0.0109 (0.01)	NA	0.012 J,SL (0.05)	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND,SL (0.001)	ND (0.001)	ND (0.001)	0.003 (0.001)	0.0004 J,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	0.0003 J (0.005)	ND,SL (0.002)	ND (0.002)	ND (0.002)	0.13 (0.002)	0.0022 J,SL (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.005)	ND,SL (0.002)	ND (0.002)	ND (0.002)	0.048 (0.002)	0.0028 J,SL (0.005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)
Xylenes (total)	10	ND (0.003)	ND,SL (0.001)	ND (0.001)	ND (0.001)	0.19 (0.001)	ND,SL (0.006)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	ND (0.0005)	0.000378 J,SL (0.00039)	0.0022 (0.00008)	0.0000631 JB (0.00008)	0.02 (0.0005)	0.00023 J,SL (0.00063)	0.00018 (0.00005)	0.000079 (0.000051)	NA	NA	NA	0.000039 J (0.00005)	NA
Benzo(a)anthracene	0.0039	ND (0.0005)	ND,SL (0.0002)	0.000179 (0.00004)	0.0000704 B (0.00004)	0.01 (0.0005)	ND,SL (0.00063)	0.000078 (0.00005)	0.000037 J (0.000051)	NA	NA	NA	0.000012 J (0.00005)	NA
Benzo(a)pyrene	0.0002	ND (0.0005)	ND,SL (0.0002)	0.0000933 (0.00004)	ND (0.00004)	0.0056 (0.0005)	ND,SL (0.00063)	0.000048 J (0.00005)	0.00003 J (0.000051)	NA	NA	NA	0.000011 J (0.00005)	NA
Benzo(b)fluoranthene	0.0012	ND (0.0005)	ND,SL (0.0002)	0.000151 (0.00004)	0.0000409 (0.00004)	0.0068 (0.0005)	ND,SL (0.00063)	0.00006 (0.00005)	0.000031 J (0.000051)	NA	NA	NA	0.000017 J (0.00005)	NA
Benzo(g,h,i)perylene	0.00026	ND (0.0005)	ND,SL (0.00039)	0.0000843 (0.00008)	ND (0.00008)	0.0013 (0.0005)	ND,SL (0.00063)	0.000021 J (0.00005)	0.000018 J (0.000051)	NA	NA	NA	0.000011 J (0.00005)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	ND,SL (0.00039)	0.00018 (0.00008)	0.0000642 J (0.00008)	0.017 (0.0005)	ND,SL (0.00063)	0.00012 (0.00005)	0.000061 (0.000051)	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.000011 J (0.00005)	ND (0.0005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.002 (0.0005)	0.00145 SL (0.00039)	0.000577 (0.00008)	ND (0.00008)	0.045 (0.0005)	0.0013 SL (0.00063)	0.00051 (0.00005)	0.00025 (0.000051)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00005)	0.0005 (0.0005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.0005)	0.0021 SL (0.00039)	ND (0.00008)	ND (0.00008)	0.11 (0.003)	ND,SL (0.00063)	0.0029 (0.00006)	0.00039 (0.000061)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00006)	ND (0.0005)
Phenanthrene	1.1	ND (0.0005)	0.00254 SL (0.00039)	ND (0.00008)	0.0000786 JB (0.00008)	0.12 (0.003)	0.00053 J,SL (0.00063)	0.00087 (0.00006)	0.00035 (0.000061)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.00006)	ND (0.0005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0007 (0.0005)	0.000354 J,SL (0.00039)	0.000679 (0.00008)	0.000376 B (0.00008)	0.028 (0.0005)	0.00026 J,SL (0.00063)	0.0003 (0.00005)	0.00017 (0.000051)	ND (0.0005)	0.0007 (0.0005)	ND (0.0005)	0.000042 J (0.00005)	0.0007 (0.0005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.0028 (0.0005)	ND,SL (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00014 J,SL (0.00052)	0.00011 J (0.001)	0.00012 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00019 J (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-146	C-146	C-146	C-146	C-150	C-150	C-152	C-152	C-155	C-156	C-157	C-157	C-158
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	11/7/2019	5/11/2022	5/16/2023	4/24/2024	8/1/2016	5/14/2021	7/29/2016	8/19/2016	1/12/2012	1/12/2012	1/12/2012	7/28/2016	1/12/2012
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-159	C-161	C-163	C-163	C-163	C-164	C-165	C-168	C-168	C-168	C-168	C-168	C-168
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Sample Date	(TDS ≤ 2500)	1/12/2012	8/1/2016	1/12/2012	7/27/2016	7/27/2016	1/12/2012	1/12/2012	5/4/2021	5/9/2022	5/11/2023	5/12/2023	4/30/2024	4/30/2024
Comments	MSC					Field Duplicate								Field Duplicate
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND,SL (0.0005)	ND (0.0005)	NA	0.0008 (0.0005)	ND (0.0005)
Cumene	3.5	ND (0.002)	0.031 (0.002)	ND (0.002)	0.001 J (0.002)	0.001 J (0.002)	ND (0.002)	ND (0.002)	0.00067 J (0.005)	ND,SL (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND,SL (0.000021)	ND (0.000021)	NA	ND (0.00002)	ND (0.00002)
Ethyl Benzene	0.7	ND (0.001)	0.007 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND,SL (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.006 (0.001)	0.001 (0.001)	ND (0.001)	ND,SL (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	ND (0.05)	ND,SL (0.01)	ND (0.01)	NA	ND (0.01)	ND (0.01)
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.00025 J (0.001)	ND,SL (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	0.014 (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	ND,SL (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	0.003 (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	ND,SL (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
Xylenes (total)	10	ND (0.001)	ND (0.001)	ND (0.001)	0.0007 J (0.001)	0.0006 J (0.001)	ND (0.001)	ND (0.001)	ND (0.006)	ND,SL (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	0.0014 (0.000051)	NA	0.0005 (0.000051)	0.00036 (0.00005)	NA	NA	0.00023 J (0.00051)	ND,SL (0.000077)	0.0000616 J (0.000083)	NA	0.0000484 J (0.00008)	0.0000545 J (0.00008)
Benzo(a)anthracene	0.0039	NA	0.00087 (0.000051)	NA	0.000065 (0.000051)	0.000055 (0.00005)	NA	NA	0.00068 (0.00051)	ND,SL (0.000038)	ND (0.000042)	NA	0.00018 (0.00004)	0.000361 (0.00004)
Benzo(a)pyrene	0.0002	NA	0.0006 (0.000051)	NA	0.000032 J (0.000051)	0.000024 J (0.00005)	NA	NA	0.0011 (0.00051)	0.0000618 B,SL (0.000038)	0.000113 B (0.000042)	NA	0.000452 (0.00004)	0.000566 (0.00004)
Benzo(b)fluoranthene	0.0012	NA	0.00087 (0.000051)	NA	0.000046 J (0.000051)	0.000034 J (0.00005)	NA	NA	0.0013 (0.00051)	ND,SL (0.000038)	0.000173 B (0.000042)	NA	0.000592 (0.00004)	0.00078 (0.00004)
Benzo(g,h,i)perylene	0.00026	NA	0.00022 (0.000051)	NA	0.00002 J (0.000051)	0.000014 J (0.00005)	NA	NA	0.00055 (0.00051)	0.0000583 J,SL (0.000077)	0.0000577 BJ (0.000083)	NA	0.00024 (0.00008)	0.000282 (0.00008)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.0005)	0.00085 (0.000051)	ND (0.0005)	0.000085 (0.000051)	0.000074 (0.00005)	ND (0.0005)	ND (0.0005)	0.00088 (0.00051)	ND,SL (0.000077)	ND (0.000083)	NA	0.000243 (0.00008)	0.000369 (0.00008)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.0005)	0.0058 (0.000051)	ND (0.0005)	0.0022 (0.000051)	0.0017 (0.00005)	0.002 (0.0005)	ND (0.0005)	0.00046 J (0.00051)	ND,SL (0.000077)	ND (0.000083)	NA	ND (0.00008)	ND (0.00008)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.0005)	0.0035 (0.000061)	ND (0.0005)	ND (0.000061)	ND (0.00006)	ND (0.0005)	ND (0.0005)	ND (0.00051)	ND,SL (0.000077)	ND (0.000083)	NA	ND (0.00008)	ND (0.00008)
Phenanthrene	1.1	ND (0.0005)	0.0056 (0.000061)	ND (0.0005)	0.00089 (0.000061)	0.00058 (0.00006)	0.001 (0.0005)	ND (0.0005)	0.00052 (0.00051)	ND,SL (0.000077)	ND (0.000083)	NA	ND (0.00008)	ND (0.00008)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.0005)	0.0028 (0.000051)	0.0007 (0.0005)	0.00049 (0.000051)	0.00042 (0.00005)	ND (0.0005)	ND (0.0005)	0.0033 (0.00051)	0.000299 SL (0.000077)	0.000353 (0.000083)	NA	0.000426 (0.00008)	0.00114 (0.00008)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	0.00019 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.000091 J (0.00052)	ND,SL (0.001)	NA	ND (0.001)	ND (0.001)	0.0191 (0.0014)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-159	C-161	C-163	C-163	C-163	C-164	C-165	C-168	C-168	C-168	C-168	C-168	C-168
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06
Sample Date	(TDS ≤ 2500)	1/12/2012	8/1/2016	1/12/2012	7/27/2016	7/27/2016	1/12/2012	1/12/2012	5/4/2021	5/9/2022	5/11/2023	5/12/2023	4/30/2024	4/30/2024
Comments	MSC					Field Duplicate								Field Duplicate

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-169	C-170	C-170	C-170	C-171	C-171	C-172	C-172	C-174	C-174	C-174	C-174	C-174
Area	Used Aquifer	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	UDEX Area	UDEX Area	UDEX Area	UDEX Area	UDEX Area
Sample Date	(TDS ≤ 2500)	8/2/2016	7/29/2016	8/26/2016	8/26/2016	7/29/2016	8/26/2016	7/29/2016	8/26/2016	7/5/2011	7/5/2011	5/31/2012	8/21/2012	11/2/2012
Comments	MSC				Field Duplicate									
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.37 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.0005)
Cumene	3.5	0.034 (0.01)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0007 J (0.002)	0.0007 J (0.002)	NA	NA	NA	NA	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000028)	ND (0.000029)	NA	NA	NA	NA	ND (0.000015)
Ethyl Benzene	0.7	0.15 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.21 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.001)
1,2,4-Trimethylbenzene	0.53	0.25 (0.01)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	ND (0.002)	ND (0.002)	ND (0.005)
1,3,5-Trimethylbenzene	0.53	0.072 (0.01)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	ND (0.002)	ND (0.002)	ND (0.005)
Xylenes (total)	10	0.6 (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	NA	NA	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.014 (0.0005)	0.00017 (0.00005)	0.00019 (0.000052)	0.00024 (0.000052)	0.00025 (0.000051)	0.00032 (0.00005)	0.00023 (0.000051)	0.00058 (0.000052)	NA	NA	NA	0.0001 J (0.0005)	0.00034 (0.0001)
Benzo(a)anthracene	0.0039	0.0049 (0.0005)	0.000017 J (0.00005)	0.00004 J (0.000052)	0.000037 J (0.000052)	0.000028 J (0.000051)	0.000042 J (0.00005)	0.00015 (0.000051)	0.00017 (0.000052)	NA	NA	NA	ND (0.0005)	ND (0.00005)
Benzo(a)pyrene	0.0002	0.0029 (0.0005)	0.000011 J (0.00005)	0.000047 J (0.000052)	0.000041 J (0.000052)	0.000011 J (0.000051)	0.000027 J (0.00005)	0.00011 (0.000051)	0.000097 (0.000052)	NA	NA	NA	ND (0.0005)	ND (0.0001)
Benzo(b)fluoranthene	0.0012	0.0031 (0.0005)	0.000015 J (0.00005)	0.000048 J (0.000052)	0.000046 J (0.000052)	0.000014 J (0.000051)	0.000033 J (0.00005)	0.00013 (0.000051)	0.00012 (0.000052)	NA	NA	NA	ND (0.0005)	ND (0.00005)
Benzo(g,h,i)perylene	0.00026	0.00071 (0.0005)	ND (0.00005)	0.000031 J (0.000052)	0.000031 J (0.000052)	ND (0.000051)	0.000027 J (0.00005)	0.000043 J (0.000051)	0.000047 J (0.000052)	NA	NA	NA	ND (0.0005)	ND (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.019 (0.0005)	0.000024 J (0.00005)	0.000033 J (0.000052)	0.000044 J (0.000052)	0.000021 J (0.000051)	0.000039 J (0.00005)	0.00016 (0.000051)	0.00018 (0.000052)	NA	NA	ND (0.0005)	0.0001 J (0.0005)	ND (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.05 (0.0005)	0.000022 J (0.00005)	0.000054 (0.000052)	0.000062 (0.000052)	0.000064 (0.000051)	0.000036 J (0.00005)	0.0028 (0.000051)	0.0062 (0.000052)	NA	NA	0.0005 J (0.0005)	ND (0.0005)	0.00054 (0.0001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.36 (0.006)	0.000068 (0.00006)	0.00011 (0.000063)	0.00011 (0.000063)	0.000037 J (0.000061)	0.000071 (0.00006)	0.00016 (0.000061)	0.00025 (0.000062)	NA	NA	0.0001 J (0.0005)	ND (0.0005)	0.000076 J (0.0001)
Phenanthrene	1.1	0.17 (0.006)	ND (0.00006)	0.000056 J (0.000063)	0.000059 J (0.000063)	0.00011 (0.000061)	0.00013 (0.00006)	0.0013 (0.000061)	0.0077 (0.000062)	NA	NA	0.0004 J (0.0005)	0.0002 J (0.0005)	0.00069 (0.00005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.017 (0.0005)	0.00021 (0.00005)	0.00012 (0.000052)	0.00011 (0.000052)	0.00007 (0.000051)	0.000089 (0.00005)	0.00065 (0.000051)	0.0014 (0.000052)	NA	NA	0.0005 J (0.0005)	0.0002 J (0.0005)	0.00045 (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	0.045 (0.002)	NA	0.0391 (0.002)	0.0407 (0.002)	0.0353 (0.004)
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.005)	NA	ND (0.005)	0.0009 J (0.005)	0.0027 J (0.05)
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	NA	ND (0.001)	0.000039 J (0.001)	ND (0.005)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	3.14 (0.005)	NA	3.37 (0.005)	3 (0.005)	1.91 (0.015)
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0054 (0.002)	ND (0.002)	ND (0.002)	0.0025 J (0.004)
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.005)	ND (0.005)	ND (0.005)	0.0017 J (0.05)
Lead	0.005	ND (0.001)	0.0011 (0.001)	0.0012 (0.001)	0.0012 (0.001)	0.00012 J (0.001)	0.00064 J (0.001)	0.00024 J (0.001)	0.00077 J (0.001)	NA	NA	ND (0.001)	ND (0.001)	ND (0.005)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.97 (0.005)	3.32 (0.005)	2.94 (0.005)	1.74 (0.015)
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-169	C-170	C-170	C-170	C-171	C-171	C-172	C-172	C-174	C-174	C-174	C-174	C-174
Area	Used Aquifer	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	UDEX Area	UDEX Area	UDEX Area	UDEX Area	UDEX Area
Sample Date	(TDS ≤ 2500)	8/2/2016	7/29/2016	8/26/2016	8/26/2016	7/29/2016	8/26/2016	7/29/2016	8/26/2016	7/5/2011	7/5/2011	5/31/2012	8/21/2012	11/2/2012
Comments	MSC				Field Duplicate									

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-174	C-174	C-174	C-174	C-175	C-175	C-175	C-175	C-175	C-176	C-176	C-176	C-176
Area	Used Aquifer	UDEX Area	UDEX Area	UDEX Area	UDEX Area	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/2/2013	7/20/2016	2/26/2019	7/17/2023	1/18/2022	1/18/2022	4/13/2022	6/28/2022	10/18/2023	1/18/2022	1/18/2022	4/13/2022	6/27/2022
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	0.00078 J (0.001)	NA	0.0013 (0.0005)	NA	NA	ND (0.001)	NA	0.00055 (0.0005)	NA
Cumene	3.5	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.0005)	0.0034 (0.001)	NA	0.0097 (0.001)	NA	NA	0.0014 (0.001)	NA	0.0045 (0.001)	NA
Cyclohexane	53	NA	NA	ND (0.005)	ND (0.01)	0.0062 J (0.01)	NA	0.0129 (0.005)	NA	NA	ND (0.01)	NA	ND (0.005)	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	ND (0.000029)	ND (0.001)	ND (0.002)	ND (0.000041)	NA	ND (0.00002)	NA	NA	ND (0.000041)	NA	ND (0.00002)	NA
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.0005)	0.00059 J (0.001)	NA	0.0011 (0.001)	NA	NA	ND (0.001)	NA	ND (0.001)	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	NA	NA	0.00025 J (0.001)	NA	ND (0.001)	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	0.0603 (0.01)	NA	NA	NA	NA	0.027 (0.01)	NA
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.00075)	0.00061 J (0.001)	NA	ND (0.001)	NA	NA	ND (0.001)	NA	ND (0.001)	NA
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	NA	NA	0.0025 (0.001)	NA	0.0042 (0.002)	NA	NA	0.0012 (0.001)	NA	ND (0.002)	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	NA	NA	0.00083 J (0.001)	NA	0.0014 J (0.002)	NA	NA	ND (0.001)	NA	ND (0.002)	NA
Xylenes (total)	10	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	0.004 (0.003)	NA	0.0052 (0.001)	NA	NA	0.002 J (0.003)	NA	0.0023 (0.001)	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	0.0024 (0.000087)	0.00195 (0.00008)	NA	NA	NA	0.0591 (0.0011)	0.0581 (0.00093)
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	ND (0.000087)	0.000132 (0.00008)	NA	NA	NA	0.000491 (0.000087)	0.000378 (0.000074)
Anthracene	0.066	ND (0.0001)	0.00017 (0.00005)	NA	NA	0.00055 J (0.001)	NA	0.000277 (0.000087)	0.000632 (0.00008)	NA	0.0063 (0.00098)	NA	0.00339 (0.000087)	0.00222 (0.000074)
Benzo(a)anthracene	0.0039	ND (0.0001)	0.00016 (0.00005)	NA	NA	0.00085 J (0.001)	NA	0.000383 (0.000043)	0.000611 (0.00004)	NA	0.005 (0.00098)	NA	0.00101 (0.000043)	0.00085 (0.000037)
Benzo(a)pyrene	0.0002	ND (0.0001)	0.00024 (0.00005)	NA	NA	0.00056 J (0.001)	NA	0.000309 (0.000043)	0.000373 (0.00004)	NA	0.0029 (0.00098)	NA	0.000546 (0.000043)	0.000669 (0.000037)
Benzo(b)fluoranthene	0.0012	ND (0.0001)	0.00023 (0.00005)	NA	NA	0.00083 J (0.001)	NA	0.000254 (0.000043)	0.000358 (0.00004)	NA	0.0039 (0.00098)	NA	0.000486 (0.000043)	0.000657 (0.000037)
Benzo(g,h,i)perylene	0.00026	ND (0.0001)	0.00015 (0.00005)	NA	NA	ND (0.001)	NA	0.000213 (0.000087)	0.000232 (0.00008)	NA	0.00092 J (0.00098)	NA	0.00025 (0.000087)	0.000306 (0.000074)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	0.000107 (0.000087)	0.000144 (0.00008)	NA	NA	NA	0.000197 (0.000087)	0.000266 (0.000074)
Chrysene	0.0019	ND (0.0001)	0.00015 (0.00005)	NA	NA	0.00089 J (0.001)	NA	0.000315 (0.000087)	0.000491 (0.00008)	NA	0.0039 (0.00098)	NA	0.000746 (0.000087)	0.00069 (0.000074)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	0.0000717 J (0.000087)	0.000071 J (0.00008)	NA	NA	NA	0.000104 (0.000087)	0.000109 (0.000074)
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	0.0012 J (0.0043)	0.0011 J (0.004)	NA	NA	NA	ND (0.0043)	ND (0.0037)
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	0.000453 (0.000087)	0.000872 (0.00008)	NA	NA	NA	0.0038 (0.0011)	0.00208 (0.000074)
Fluorene	1.9	ND (0.0001)	0.00071 (0.00005)	NA	NA	0.00098 J (0.001)	NA	0.000489 (0.000087)	0.000776 (0.00008)	NA	0.0169 (0.00098)	NA	0.0189 E (0.000087)	0.0268 (0.00093)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	0.000176 (0.000087)	0.000213 (0.00008)	NA	NA	NA	0.00025 (0.000087)	0.000299 (0.000074)
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	ND (0.0011)	ND (0.001)	NA	NA	NA	0.00095 J (0.0011)	0.001 (0.00093)
Naphthalene	0.1	ND (0.0001)	ND (0.00006)	NA	NA	0.00092 J (0.001)	NA	0.00049 (0.000087)	0.00149 (0.00008)	NA	0.0022 (0.00098)	NA	0.00074 (0.000087)	0.000548 (0.000074)
Phenanthrene	1.1	ND (0.0001)	0.0002 (0.00006)	NA	NA	0.00045 J (0.001)	NA	0.000277 (0.000087)	0.000597 (0.00008)	NA	0.0216 (0.00098)	NA	0.0154 (0.0011)	0.0264 (0.00093)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	ND (0.0022)	ND (0.002)	NA	NA	NA	ND (0.0022)	ND (0.0019)
Pyrene	0.13	ND (0.0001)	0.00043 (0.00005)	NA	NA	0.0024 (0.001)	NA	0.000768 (0.000087)	0.000986 (0.00008)	NA	0.0113 (0.00098)	NA	0.00244 (0.000087)	0.00174 (0.000074)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	0.26 (0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	0.332 J (0.5)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	0.0562 (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	ND (0.05)	NA	NA	NA	NA	NA	NA	NA	0.0019 (0.001)	NA	NA	NA	NA
Lead	0.005	ND (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	3.56 (0.015)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 (0.002)	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	0.0172 (0.003)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	ND (0.05)	NA	NA	NA	NA	ND (0.05)	0.0075 (0.001)	NA	NA	NA	ND (0.05)	0.001 (0.001)	NA
Lead	0.005	ND (0.003)	ND (0.001)	NA	NA	NA	0.0077 (0.006)	0.0017 (0.001)	NA	NA	NA	0.003 (0.003)	ND (0.001)	NA
Manganese	0.3	3.31 (0.015)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	0.0283 (0.01)	0.0105 (0.002)	NA	NA	NA	ND (0.01)	ND (0.002)	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	ND (0.05)	0.0053 (0.002)	NA	NA	NA	ND (0.05)	0.0021 (0.002)	NA
Zinc	2	NA	NA	NA	NA	NA	0.0338 (0.02)	ND (0.01)	NA	NA	NA	ND (0.02)	ND (0.01)	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-174	C-174	C-174	C-174	C-175	C-175	C-175	C-175	C-175	C-176	C-176	C-176	C-176
Area	Used Aquifer	UDEX Area	UDEX Area	UDEX Area	UDEX Area	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/2/2013	7/20/2016	2/26/2019	7/17/2023	1/18/2022	1/18/2022	4/13/2022	6/28/2022	10/18/2023	1/18/2022	1/18/2022	4/13/2022	6/27/2022
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-176	C-176	C-177	C-178	C-179	C-179	C-180	C-180	C-181	C-181	C-49	C-49	C-49
Area	Used Aquifer	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	10/18/2023	4/22/2024	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	12/1/2009	7/13/2010	7/21/2016
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	NA	ND (0.0005)	0.00086 (0.0005)	0.0006 (0.0005)	ND (0.0005)	NA	0.0375 (0.0005)	NA	0.29 (0.005)	NA	0.002 (0.001)	ND (0.001)	ND (0.001)
Cumene	3.5	NA	0.0046 (0.001)	0.00067 J (0.001)	ND (0.001)	0.0011 (0.001)	NA	0.0089 (0.001)	NA	0.0356 (0.001)	NA	ND (0.002)	ND (0.002)	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	NA	ND (0.00002)	ND (0.000021)	ND (0.000021)	ND (0.000021)	NA	ND (0.000021)	NA	ND (0.000021)	NA	ND (0.000029)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	0.0024 (0.001)	NA	0.0103 (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	NA	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	0.0005 J (0.001)	0.001 (0.001)
tert Butyl alcohol	--	NA	0.0196 (0.01)	0.0128 (0.01)	0.0094 J (0.01)	ND (0.01)	NA	ND (0.01)	NA	0.0085 J (0.01)	NA	NA	NA	NA
Toluene	1	NA	ND (0.001)	ND (0.001)	0.00059 J (0.001)	ND (0.001)	NA	0.0032 (0.001)	NA	0.0124 (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	0.0029 (0.002)	NA	0.0064 (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	NA	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.002)	NA	0.0032 (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.002)
Xylenes (total)	10	NA	0.0014 (0.001)	ND (0.001)	0.00064 J (0.001)	0.0023 (0.001)	NA	0.0089 (0.001)	NA	0.044 (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	0.00254 (0.00008)	0.000331 (0.000085)	0.000178 (0.000083)	0.000586 (0.00008)	NA	0.000689 (0.000083)	NA	ND (0.000083)	NA	NA	NA	0.00019 (0.000052)
Benzo(a)anthracene	0.0039	NA	0.0000917 (0.00004)	0.000122 (0.000043)	0.0000326 J (0.000042)	ND (0.00004)	NA	0.000165 (0.000042)	NA	0.0000405 J (0.000042)	NA	NA	NA	0.000017 J (0.000052)
Benzo(a)pyrene	0.0002	NA	ND (0.00004)	0.0000606 (0.000043)	0.0000268 J (0.000042)	ND (0.00004)	NA	0.000126 (0.000042)	NA	ND (0.000042)	NA	NA	NA	ND (0.000052)
Benzo(b)fluoranthene	0.0012	NA	ND (0.00004)	0.0000688 (0.000043)	0.0000303 J (0.000042)	ND (0.00004)	NA	0.000167 (0.000042)	NA	ND (0.000042)	NA	NA	NA	0.000013 J (0.000052)
Benzo(g,h,i)perylene	0.00026	NA	ND (0.00008)	ND (0.000085)	ND (0.000083)	ND (0.00008)	NA	0.000106 (0.000083)	NA	ND (0.000083)	NA	NA	NA	0.000012 J (0.000052)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	NA	0.0000606 J (0.00008)	0.000121 (0.000085)	ND (0.000083)	ND (0.00008)	NA	0.000167 (0.000083)	NA	ND (0.000083)	NA	ND (0.005)	ND (0.005)	ND (0.000052)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	NA	0.0259 (0.0008)	0.000343 (0.000085)	0.0000978 (0.000083)	0.000993 (0.00008)	NA	0.00211 (0.000083)	NA	0.00164 (0.000083)	NA	ND (0.005)	ND (0.005)	0.000011 J (0.000052)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	NA	0.000111 (0.00008)	ND (0.005)	ND (0.005)	ND (0.005)	NA	0.003 J (0.005)	NA	0.01 (0.005)	NA	ND (0.005)	ND (0.005)	ND (0.000062)
Phenanthrene	1.1	NA	0.0209 (0.0008)	0.000135 (0.000085)	0.000107 (0.000083)	0.000312 (0.00008)	NA	0.000655 (0.000083)	NA	0.000353 (0.000083)	NA	ND (0.005)	ND (0.005)	ND (0.000062)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	NA	0.000911 (0.00008)	0.000492 (0.000085)	0.000235 (0.000083)	0.000091 (0.00008)	NA	0.000667 (0.000083)	NA	0.000135 (0.000083)	NA	ND (0.005)	ND (0.005)	0.00004 J (0.000052)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	0.0011 (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	0.0034 (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	ND (0.001)	ND (0.003)	0.0033 (0.003)	NA	ND (0.001)	NA	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.000001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-176	C-176	C-177	C-178	C-179	C-179	C-180	C-180	C-181	C-181	C-49	C-49	C-49
Area	Used Aquifer	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	10/18/2023	4/22/2024	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	4/3/2023	12/1/2009	7/13/2010	7/21/2016
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-50	C-50	C-50	C-51	C-51	C-51	C-51	C-51	C-51	C-51	C-52	C-52	C-52
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/13/2010	7/12/2010	7/27/2016	11/9/2005	12/17/2007	11/11/2009	1/12/2010	7/14/2010	7/27/2016	7/27/2016	10/21/2004	1/13/2010	7/15/2010
Comments	MSC										Field Duplicate			
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
Cumene	3.5	ND (0.002)	ND (0.002)	0.0006 J (0.002)	NA	NA	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.002)	0.001 J (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	ND (0.000029)	NA	NA	ND (0.0000097)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000028)	ND (0.00002)	ND (0.00003)	ND (0.000029)
Ethyl Benzene	0.7	0.0006 J (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.0005)	0.0006 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.0005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	ND (0.0005)	0.0007 J (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	NA	NA	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
Xylenes (total)	10	0.001 (0.001)	ND (0.001)	ND (0.001)	NA	NA	ND (0.0005)	0.002 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	0.001 (0.001)	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	0.000028 J (0.000051)	NA	NA	NA	NA	NA	0.00015 (0.00005)	0.00032 (0.000051)	NA	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	ND (0.000051)	ND (0.0001)	NA	NA	NA	NA	0.00006 (0.00005)	0.00012 (0.000051)	NA	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	ND (0.000051)	ND (0.0001)	NA	NA	NA	NA	0.000019 J (0.00005)	0.000053 (0.000051)	NA	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	ND (0.000051)	0.0001 (0.0001)	NA	NA	NA	NA	0.000031 J (0.00005)	0.000071 (0.000051)	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	ND (0.000051)	ND (0.0001)	NA	NA	NA	NA	0.000015 J (0.00005)	0.000041 J (0.000051)	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.05)	ND (0.005)	ND (0.000051)	NA	NA	0.0006	ND (0.005)	ND (0.005)	0.000059 (0.00005)	0.00013 (0.000051)	0.00047 J	0.002 J (0.005)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.05)	0.001 J (0.005)	0.000051 (0.000051)	NA	0.002 J	NA	0.002 J (0.005)	0.003 J (0.005)	0.00099 (0.00005)	0.0018 (0.000051)	ND (0.0098)	ND (0.005)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	ND (0.0001)	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.05)	ND (0.005)	ND (0.000061)	NA	NA	ND (0.001)	ND (0.005)	ND (0.005)	0.000041 J (0.00006)	0.00007 (0.000061)	ND (0.005)	ND (0.005)	ND (0.005)
Phenanthrene	1.1	ND (0.05)	ND (0.005)	ND (0.000061)	NA	NA	0.00065	ND (0.005)	ND (0.005)	0.000096 (0.00006)	0.00022 (0.000061)	ND (0.0098)	ND (0.005)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.011 J (0.05)	0.002 J (0.005)	0.000065 (0.000051)	NA	NA	0.003	0.002 J (0.005)	0.002 J (0.005)	0.00087 (0.00005)	0.0017 (0.000051)	ND (0.0098)	0.004 J (0.005)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.000052 J (0.000001)	ND (0.000001)	ND (0.001)	NA	NA	ND (0.00005)	ND (0.000001)	ND (0.000001)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.000001)	ND (0.000001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-50	C-50	C-50	C-51	C-51	C-51	C-51	C-51	C-51	C-51	C-52	C-52	C-52
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/13/2010	7/12/2010	7/27/2016	11/9/2005	12/17/2007	11/11/2009	1/12/2010	7/14/2010	7/27/2016	7/27/2016	10/21/2004	1/13/2010	7/15/2010
Comments	MSC										Field Duplicate			

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-52	C-53A	C-53A	C-54	C-54	C-54	C-54	C-55	C-55	C-56	C-56	C-56	C-57
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned
Sample Date	(TDS ≤ 2500)	7/27/2016	1/12/2010	7/16/2010	1/13/2010	7/15/2010	7/21/2016	8/19/2016	1/14/2010	7/16/2010	1/15/2010	7/27/2010	1/6/2022	1/13/2010
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.14	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0007 J (0.001)	0.0007 J (0.001)	NA	ND (0.001)
Cumene	3.5	0.003 (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.001 J (0.002)	0.002 J (0.002)	NA	ND (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	NA	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	ND (0.001)	0.0007 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.002 (0.001)	0.002 (0.001)	NA	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	0.001 (0.001)	NA	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	0.0007 J (0.002)	ND (0.002)	ND (0.002)	0.0006 J (0.002)	ND (0.002)	ND (0.002)	0.02 (0.002)	0.029 (0.002)	NA	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.01 (0.002)	0.013 (0.002)	NA	ND (0.002)
Xylenes (total)	10	ND (0.001)	0.001 (0.001)	ND (0.001)	0.002 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0009 J (0.001)	ND (0.001)	0.021 (0.001)	0.023 (0.001)	NA	ND (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.00014 (0.00005)	NA	NA	NA	NA	0.000032 J (0.000052)	0.000045 J (0.000051)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.000033 J (0.00005)	NA	NA	NA	NA	0.000026 J (0.000052)	0.000034 J (0.000051)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	0.000025 J (0.00005)	NA	NA	NA	NA	0.000027 J (0.000052)	0.000034 J (0.000051)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.000042 J (0.00005)	NA	NA	NA	NA	0.000035 J (0.000052)	0.000032 J (0.000051)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	0.00002 J (0.00005)	NA	NA	NA	NA	0.00002 J (0.000052)	0.000026 J (0.000051)	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.000043 J (0.00005)	ND (0.005)	ND (0.005)	0.002 J (0.005)	ND (0.005)	0.000029 J (0.000052)	0.000035 J (0.000051)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	NA	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00001 J (0.00005)	ND (0.005)	0.003 J (0.005)	ND (0.005)	ND (0.005)	0.000013 J (0.000052)	0.000025 J (0.000051)	ND (0.005)	ND (0.005)	0.009 (0.005)	0.029 (0.005)	NA	0.002 J (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00006)	ND (0.005)	ND (0.005)	0.003 J (0.005)	ND (0.005)	0.000045 J (0.000062)	0.0001 (0.000061)	ND (0.005)	ND (0.005)	0.007 (0.005)	0.015 (0.005)	NA	0.001 J (0.005)
Phenanthrene	1.1	0.00011 (0.00006)	ND (0.005)	ND (0.005)	0.002 J (0.005)	ND (0.005)	ND (0.000062)	0.000091 (0.000061)	ND (0.005)	ND (0.005)	0.011 (0.005)	0.072 (0.005)	NA	0.004 J (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.00015 (0.00005)	0.003 J (0.005)	0.002 J (0.005)	0.003 J (0.005)	ND (0.005)	0.000042 J (0.000052)	0.000055 (0.000051)	ND (0.005)	ND (0.005)	ND (0.005)	0.008 (0.005)	NA	0.002 J (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0000017)	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000013 (0.0000017)	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000017 (0.0000017)	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000012 (0.0000017)	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0000059 (0.0000017)	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000023 (0.0000017)	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	ND (0.000001)	ND (0.000001)	ND (0.000001)	0.000068 J (0.000001)	ND (0.001)	0.00011 J (0.001)	0.00014 J (0.000001)	0.000069 J (0.000001)	0.0021 (0.000001)	0.0158 (0.000001)	NA	ND (0.000001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-52	C-53A	C-53A	C-54	C-54	C-54	C-54	C-55	C-55	C-56	C-56	C-56	C-57
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned
Sample Date	(TDS ≤ 2500)	7/27/2016	1/12/2010	7/16/2010	1/13/2010	7/15/2010	7/21/2016	8/19/2016	1/14/2010	7/16/2010	1/15/2010	7/27/2010	1/6/2022	1/13/2010
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-57	C-57	C-58	C-58	C-58	C-60	C-60	C-60	C-61	C-61	C-61	C-61	C-61
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/14/2010	7/26/2016	1/14/2010	7/14/2010	7/25/2016	1/14/2010	7/16/2010	7/21/2016	1/14/2010	7/19/2010	7/25/2016	1/18/2022	1/18/2022
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.012 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA
Cumene	3.5	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.0007 J (0.002)	ND (0.002)	0.002 J (0.002)	0.00067 J (0.001)	NA
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00089 J (0.01)	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.00004)	NA
Ethyl Benzene	0.7	ND (0.001)	ND (0.001)	0.0006 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.001 (0.001)	0.003 (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.0027 (0.001)	NA
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	NA
1,2,4-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	0.0006 J (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.001 J (0.002)	ND (0.002)	0.008 (0.002)	ND (0.001)	NA
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.002 (0.002)	ND (0.001)	NA
Xylenes (total)	10	ND (0.001)	ND (0.001)	0.001 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.004 (0.001)	0.001 (0.001)	0.001 (0.001)	ND (0.003)	NA
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	0.00098 (0.000051)	NA	NA	0.00015 (0.000052)	NA	NA	0.000069 (0.000052)	NA	NA	0.00019 (0.000051)	ND (0.00098)	NA
Benzo(a)anthracene	0.0039	NA	0.0012 (0.000051)	NA	NA	0.00005 J (0.000052)	NA	NA	0.000025 J (0.000052)	NA	NA	0.00012 (0.000051)	ND (0.00098)	NA
Benzo(a)pyrene	0.0002	NA	0.0011 (0.000051)	NA	NA	0.000013 J (0.000052)	NA	NA	0.000012 J (0.000052)	NA	NA	0.000054 (0.000051)	ND (0.00098)	NA
Benzo(b)fluoranthene	0.0012	NA	0.0012 (0.000051)	NA	NA	0.000015 J (0.000052)	NA	NA	0.00002 J (0.000052)	NA	NA	0.000042 J (0.000051)	ND (0.00098)	NA
Benzo(g,h,i)perylene	0.00026	NA	0.00058 (0.000051)	NA	NA	ND (0.000052)	NA	NA	0.000012 J (0.000052)	NA	NA	0.000018 J (0.000051)	ND (0.00098)	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.003 J (0.005)	0.0013 (0.000051)	ND (0.005)	ND (0.005)	0.000053 (0.000052)	ND (0.005)	ND (0.005)	0.000017 J (0.000052)	NA	ND (0.005)	0.00011 (0.000051)	ND (0.00098)	NA
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.006 (0.005)	0.0019 (0.000051)	ND (0.005)	ND (0.005)	0.00057 (0.000052)	ND (0.005)	ND (0.005)	0.000012 J (0.000052)	NA	ND (0.005)	0.0011 (0.000051)	ND (0.00098)	NA
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	0.004 J (0.005)	0.0017 (0.000061)	ND (0.005)	ND (0.005)	0.00012 (0.000063)	ND (0.005)	ND (0.005)	ND (0.000062)	NA	ND (0.005)	0.0014 (0.000062)	ND (0.00098)	NA
Phenanthrene	1.1	0.008 (0.005)	0.0038 (0.000061)	0.002 J (0.005)	0.002 J (0.005)	0.0016 (0.000063)	ND (0.005)	ND (0.005)	ND (0.000062)	NA	ND (0.005)	0.00016 (0.000062)	ND (0.00098)	NA
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.005 J (0.005)	0.0022 (0.000051)	ND (0.005)	0.001 J (0.005)	0.00061 (0.000052)	ND (0.005)	ND (0.005)	0.000091 (0.000052)	NA	ND (0.005)	0.00085 (0.000051)	ND (0.00098)	NA
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.05)
Lead	0.005	ND (0.000001)	ND (0.001)	ND (0.000001)	ND (0.000001)	ND (0.001)	ND (0.000001)	ND (0.000001)	ND (0.001)	ND (0.000001)	ND (0.000001)	ND (0.001)	NA	ND (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.01)
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.05)
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.02)

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-57	C-57	C-58	C-58	C-58	C-60	C-60	C-60	C-61	C-61	C-61	C-61	C-61
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	7/14/2010	7/26/2016	1/14/2010	7/14/2010	7/25/2016	1/14/2010	7/16/2010	7/21/2016	1/14/2010	7/19/2010	7/25/2016	1/18/2022	1/18/2022
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-61	C-61	C-62	C-62	C-62	C-62	C-62	C-62	C-63	C-63	C-64	C-64	C-64
Area	Used Aquifer	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/13/2022	6/28/2022	1/15/2010	7/20/2010	7/27/2016	5/23/2017	6/26/2018	1/6/2022	1/12/2010	7/16/2010	10/21/2004	1/15/2010	7/19/2010
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	7.08	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.0005)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	NA	0.003 (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	0.003 (0.001)
Cumene	3.5	ND (0.001)	NA	0.0009 J (0.002)	0.0005 J (0.002)	ND (0.01)	0.0009 J (0.002)	ND (0.001)	NA	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.002)	ND (0.002)
Cyclohexane	53	0.0013 J (0.005)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.00002)	NA	ND (0.000029)	ND (0.000029)	ND (0.000028)	ND (0.000028)	ND (0.00001)	NA	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	NA	0.002 (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)
Methyl tert-butyl ether	0.02	0.0025 (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)
tert Butyl alcohol	--	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.001)	0.003 (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.01)	ND (0.002)	ND (0.001)	NA	0.001 J (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	NA	ND (0.002)	ND (0.002)	ND (0.01)	ND (0.002)	ND (0.001)	NA	ND (0.002)	ND (0.002)	NA	ND (0.002)	ND (0.002)
Xylenes (total)	10	ND (0.001)	NA	0.002 (0.001)	0.0006 J (0.001)	ND (0.005)	0.0008 J (0.001)	ND (0.003)	NA	0.005 (0.001)	ND (0.001)	ND (0.01)	ND (0.001)	0.0008 J (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	0.000118 (0.00008)	0.000292 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	ND (0.00008)	ND (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0000957 (0.00008)	0.0000419 J (0.00008)	NA	NA	0.00033 (0.000051)	0.0004 J (0.0005)	0.000113 (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.0039	0.0000369 J (0.00004)	ND (0.00004)	NA	NA	0.00026 (0.000051)	0.0004 J (0.0005)	ND (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.0002	ND (0.00004)	ND (0.00004)	NA	NA	0.0003 (0.000051)	0.0005 J (0.0005)	ND (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.0012	0.0000309 J (0.00004)	ND (0.00004)	NA	NA	0.00034 (0.000051)	0.0005 J (0.0005)	ND (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0.00026	ND (0.00008)	ND (0.00008)	NA	NA	0.00022 (0.000051)	0.0004 J (0.0005)	ND (0.00005)	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.00055	ND (0.00008)	ND (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.00008)	ND (0.00008)	ND (0.005)	ND (0.005)	0.00028 (0.000051)	0.0004 J (0.0005)	ND (0.00005)	NA	ND (0.005)	ND (0.005)	0.00044 J	ND (0.005)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	ND (0.00008)	ND (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	ND (0.004)	ND (0.004)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	0.0000737 J (0.00008)	0.000159 (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.00015 (0.00008)	0.000147 (0.00008)	ND (0.005)	0.001 J (0.005)	0.00064 (0.000051)	0.0009 (0.0005)	0.000515 (0.00005)	NA	ND (0.005)	ND (0.005)	ND (0.0099)	ND (0.005)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	ND (0.00008)	ND (0.00008)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	ND (0.001)	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.00008)	ND (0.00008)	ND (0.005)	ND (0.005)	ND (0.000061)	0.009 (0.0005)	0.00658 (0.00025)	NA	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)
Phenanthrene	1.1	0.000149 (0.00008)	0.0000606 J (0.00008)	0.002 J (0.005)	0.002 J (0.005)	0.0012 (0.000061)	0.001 (0.0005)	0.000344 (0.00005)	NA	ND (0.005)	ND (0.005)	ND (0.0099)	ND (0.005)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	ND (0.002)	ND (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.000115 (0.00008)	0.000113 (0.00008)	ND (0.005)	0.001 J (0.005)	0.00046 (0.000051)	0.0007 (0.0005)	0.0000542 (0.00005)	NA	ND (0.005)	ND (0.005)	ND (0.0099)	ND (0.005)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	0.000023 (0.00002)	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	0.000045 (0.00002)	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	ND (0.00002)	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	0.00031 (0.00002)	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	0.00004 (0.00002)	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	0.00011 (0.00002)	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	ND (0.001)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	NA	0.000076 J (0.000001)	0.00017 J (0.000001)	0.00019 J (0.001)	0.00029 J (0.001)	ND (0.002)	NA	ND (0.000001)	0.00042 J (0.000001)	ND (0.005)	ND (0.000001)	ND (0.000001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.0022 (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	0.0081 (0.002)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	ND (0.01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-61	C-61	C-62	C-62	C-62	C-62	C-62	C-62	C-63	C-63	C-64	C-64	C-64
Area	Used Aquifer	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	4/13/2022	6/28/2022	1/15/2010	7/20/2010	7/27/2016	5/23/2017	6/26/2018	1/6/2022	1/12/2010	7/16/2010	10/21/2004	1/15/2010	7/19/2010
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-65	C-95	C-95	C-96	C-96	C-96	C-97	C-98	C-98	U-1	U-2	U-4	U-4
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/15/2010	1/13/2010	7/13/2010	1/13/2010	7/13/2010	7/21/2016	10/21/2004	1/14/2010	7/16/2010	6/6/2006	6/6/2006	6/6/2006	1/9/2013
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	ND (0.001)	0.0005 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	0.0014	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	0.0014 (0.001)
Cumene	3.5	ND (0.002)	0.018 (0.002)	0.019 (0.002)	ND (0.002)	ND (0.002)	ND (0.02)	0.037	ND (0.002)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.005)	0.0034 (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000029)	ND (0.00003)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.00003)	ND (0.000029)	ND (0.000028)	ND (0.000029)	ND (0.000029)	ND (0.00002)
Ethyl Benzene	0.7	ND (0.001)	0.0007 J (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	0.0017 (0.001)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	0.012	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.01)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.002)	0.001 J (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.02)	NA	0.0006 J (0.002)	ND (0.002)	NA	NA	NA	0.0029 (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.02)	NA	ND (0.002)	ND (0.002)	NA	NA	NA	ND (0.002)
Xylenes (total)	10	ND (0.001)	0.004 (0.001)	0.002 (0.001)	0.0006 J (0.001)	ND (0.001)	ND (0.01)	ND (0.01)	0.001 (0.001)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.005)	0.0083 (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	NA	NA	0.00049 (0.00005)	NA	NA	NA	NA	NA	NA	0.00118 (0.0001)
Benzo(a)anthracene	0.0039	NA	NA	NA	NA	NA	0.00027 (0.00005)	NA	NA	NA	NA	NA	NA	0.000997 (0.0001)
Benzo(a)pyrene	0.0002	NA	NA	NA	NA	NA	0.00019 (0.00005)	NA	NA	NA	NA	NA	NA	0.000686 (0.0001)
Benzo(b)fluoranthene	0.0012	NA	NA	NA	NA	NA	0.0002 (0.00005)	NA	NA	NA	NA	NA	NA	0.00035 (0.0001)
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	NA	NA	0.0001 (0.00005)	NA	NA	NA	NA	NA	NA	0.000344 (0.0001)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.048)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.0003 (0.00005)	ND (0.00014)	ND (0.005)	ND (0.005)	0.81 (0.05)	ND (0.005)	ND (0.005)	0.00159 (0.0001)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.048)	ND (0.005)	ND (0.005)	0.002 J (0.005)	0.003 J (0.005)	0.00096 (0.00005)	ND (0.0098)	0.002 J (0.005)	0.001 J (0.005)	0.55 (0.05)	ND (0.005)	ND (0.005)	0.00191 (0.0001)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.048)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.00022 (0.00006)	ND (0.005)	ND (0.005)	ND (0.005)	0.06 (0.05)	ND (0.005)	ND (0.005)	0.000692 (0.0001)
Phenanthrene	1.1	ND (0.048)	ND (0.005)	ND (0.005)	0.002 J (0.005)	0.004 J (0.005)	0.002 (0.00006)	ND (0.0098)	ND (0.005)	0.001 J (0.005)	1.1 (0.05)	ND (0.005)	ND (0.005)	0.00329 (0.0001)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	ND (0.048)	ND (0.005)	ND (0.005)	0.001 J (0.005)	0.003 J (0.005)	0.0011 (0.00005)	ND (0.0098)	0.001 J (0.005)	0.001 J (0.005)	2.6 (0.25)	ND (0.005)	ND (0.005)	0.00259 (0.0001)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.001)	ND (0.001)	ND (0.001)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.001 (0.000001)	ND (0.000001)	ND (0.000001)	0.000052 J (0.000001)	ND (0.000001)	0.0001 J (0.001)	ND (0.005)	ND (0.000001)	ND (0.000001)	NA	NA	NA	ND (0.003)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	C-65	C-95	C-95	C-96	C-96	C-96	C-97	C-98	C-98	U-1	U-2	U-4	U-4
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Tank Group 06	Tank Group 06	Tank Group 06	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	1/15/2010	1/13/2010	7/13/2010	1/13/2010	7/13/2010	7/21/2016	10/21/2004	1/14/2010	7/16/2010	6/6/2006	6/6/2006	6/6/2006	1/9/2013
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	U-4	U-4	U-5	URS-1	URS-1	URS-1	URS-1	URS-2	URS-2	URS-3	URS-3	URS-3	URS-3
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/5/2016	8/22/2016	6/6/2006	6/6/2006	1/9/2013	5/9/2016	8/23/2016	6/6/2006	1/9/2013	5/25/2005	6/6/2006	5/9/2016	8/24/2016
Comments	MSC													
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.002 (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	0.013 (0.001)	ND (0.0005)	ND (0.001)	0.008 (0.005)	0.0034 (0.001)	0.012 (0.005)	0.018 (0.005)	0.004 (0.0005)	0.002 (0.001)
Cumene	3.5	ND (0.0005)	ND (0.002)	ND (0.005)	ND (0.005)	ND (0.002)	ND (0.0005)	ND (0.002)	0.011 (0.005)	0.0077 (0.002)	0.005 (0.005)	0.018 (0.005)	0.055 (0.0005)	0.002 J (0.002)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.0000095)	ND (0.000028)	ND (0.000028)	ND (0.000029)	ND (0.00002)	ND (0.0000098)	ND (0.000029)	ND (0.000029)	ND (0.00002)	ND (0.000029)	ND (0.000028)	0.000011 J (0.0000096)	ND (0.000028)
Ethyl Benzene	0.7	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.005)	0.0038 (0.001)	ND (0.005)	ND (0.005)	0.0006 J (0.0005)	ND (0.001)
Methyl tert-butyl ether	0.02	ND (0.0005)	ND (0.001)	ND (0.005)	0.008 (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.0005)	ND (0.001)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1	0.0009 J (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	ND (0.005)	0.0023 (0.001)	ND (0.005)	ND (0.005)	0.002 (0.0005)	0.0009 J (0.001)
1,2,4-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	NA	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	0.0062 (0.002)	NA	NA	ND (0.0005)	ND (0.002)
1,3,5-Trimethylbenzene	0.53	ND (0.0005)	ND (0.002)	NA	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	0.0022 (0.002)	NA	NA	0.0008 J (0.0005)	0.0007 J (0.002)
Xylenes (total)	10	ND (0.0005)	ND (0.001)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	0.007 (0.005)	0.0199 (0.001)	0.009 (0.005)	0.009 (0.005)	0.009 (0.0005)	0.008 (0.001)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.000058 (0.00001)	0.00032 J (0.0005)	NA	NA	ND (0.0001)	0.00033 (0.00001)	0.00062 (0.000053)	NA	0.00123 (0.0001)	NA	NA	0.021 (0.0001)	0.00017 (0.000054)
Benzo(a)anthracene	0.0039	0.00042 (0.00001)	0.00099 (0.0005)	NA	NA	ND (0.0001)	0.000038 J (0.00001)	0.000017 J (0.000053)	NA	0.000787 (0.0001)	NA	NA	0.066 (0.0001)	0.0053 (0.000054)
Benzo(a)pyrene	0.0002	0.00078 (0.00001)	0.0027 J (0.0005)	NA	NA	ND (0.0001)	0.000028 J (0.00001)	ND,J (0.000053)	NA	0.000407 (0.0001)	NA	NA	0.047 (0.0001)	0.0045 (0.000054)
Benzo(b)fluoranthene	0.0012	0.00033 (0.00001)	0.0011 J (0.0005)	NA	NA	ND (0.0001)	0.000034 J (0.00001)	ND,J (0.000053)	NA	0.000333 (0.0001)	NA	NA	0.056 (0.0001)	0.0054 (0.000054)
Benzo(g,h,i)perylene	0.00026	0.00044 (0.00001)	0.0024 J (0.0005)	NA	NA	ND (0.0001)	0.000012 J (0.00001)	ND,J (0.000053)	NA	0.000314 (0.0001)	NA	NA	0.014 (0.0001)	0.0014 (0.000054)
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.0011 (0.00001)	0.0045 (0.0005)	ND (0.005)	ND (0.005)	ND (0.0001)	0.000035 J (0.00001)	0.000012 J (0.000053)	ND (0.005)	0.000805 (0.0001)	ND (0.01)	0.045 (0.005)	0.046 (0.0001)	0.0039 (0.000054)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.000085 (0.00001)	0.00022 J (0.0005)	ND (0.005)	ND (0.005)	0.00137 (0.0001)	0.0052 (0.00001)	0.016 (0.00026)	ND (0.005)	0.00161 (0.0001)	0.029 (0.01)	0.098 (0.005)	0.027 (0.0001)	0.0049 (0.000054)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.000031)	0.0093 (0.0006)	ND (0.005)	ND (0.005)	0.00174 (0.0001)	0.00029 (0.00003)	0.0044 (0.000064)	ND (0.005)	0.00124 (0.0001)	ND (0.01)	ND (0.005)	0.0032 (0.00031)	ND (0.000065)
Phenanthrene	1.1	ND (0.000031)	ND (0.0006)	ND (0.005)	ND (0.005)	0.000127 (0.0001)	0.00073 (0.00003)	0.00098 (0.000064)	0.006 (0.005)	0.00199 (0.0001)	0.021 (0.01)	0.26 (0.025)	0.055 (0.00031)	0.0025 (0.000065)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.0011 (0.00001)	0.0029 (0.0005)	ND (0.005)	ND (0.005)	0.000218 (0.0001)	0.00018 (0.00001)	0.00032 (0.000053)	ND (0.005)	0.00209 (0.0001)	0.015 (0.01)	0.16 (0.025)	0.13 (0.00051)	0.0084 (0.000054)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	0.0036 (0.001)	ND (0.001)	NA	NA	NA	ND (0.001)	NA	ND (0.001)	ND (0.001)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.0005 J (0.00013)	0.00078 J (0.001)	NA	NA	ND (0.003)	ND (0.00013)	0.00022 J (0.001)	NA	0.0035 (0.003)	NA	NA	0.0013 (0.00013)	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	U-4	U-4	U-5	URS-1	URS-1	URS-1	URS-1	URS-2	URS-2	URS-3	URS-3	URS-3	URS-3
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/5/2016	8/22/2016	6/6/2006	6/6/2006	1/9/2013	5/9/2016	8/23/2016	6/6/2006	1/9/2013	5/25/2005	6/6/2006	5/9/2016	8/24/2016
Comments	MSC													

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	URS-3	URS-4	URS-4	URS-4	URS-4	URS-5	URS-5	URS-5	URS-5	URS-5	URS-5	WP16-5	WP16-5
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	8/24/2016	6/6/2006	1/9/2013	5/9/2016	8/24/2016	6/6/2006	7/1/2019	11/14/2019	5/6/2021	4/14/2022	4/14/2022	5/26/2005	6/9/2006
Comments	MSC											Field Duplicate		
Water Quality														
pH	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds														
Benzene	0.005	0.001 (0.001)	ND (0.005)	0.0468 (0.001)	ND (0.0005)	ND (0.001)	NA	3.3 (0.05)	3.5 (0.05)	3.9 (0.05)	4.85 (0.025)	4.68 (0.025)	ND (0.005)	ND (0.005)
Cumene	3.5	0.017 (0.002)	ND (0.005)	0.0028 (0.002)	ND (0.0005)	ND (0.002)	NA	0.026 (0.025)	0.021 J (0.025)	0.026 (0.025)	0.0321 J (0.05)	0.0341 J (0.05)	ND (0.005)	ND (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.000028)	ND (0.00002)	ND (0.0000098)	ND (0.000028)	NA	ND (0.000029)	ND (0.000028)	ND (0.000029)	0.000066 (0.00002)	0.000051 (0.00002)	ND (0.00003)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	0.53 (0.005)	0.5 (0.005)	0.68 (0.005)	0.828 (0.05)	0.817 (0.05)	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (0.001)	ND (0.005)	0.0047 (0.001)	0.002 (0.0005)	0.002 (0.001)	NA	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.05)	ND (0.005)	ND (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA	NA	NA	0.08 J (0.25)	ND (0.5)	ND (0.5)	NA	NA
Toluene	1	0.001 (0.001)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	4.4 (0.05)	4.3 (0.05)	8.7 (0.05)	7.95 (0.05)	7.77 (0.05)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	0.0005 J (0.002)	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	0.24 (0.025)	0.21 (0.025)	0.23 (0.025)	0.295 (0.1)	0.346 (0.1)	NA	NA
1,3,5-Trimethylbenzene	0.53	0.0008 J (0.002)	NA	ND (0.002)	ND (0.0005)	ND (0.002)	NA	0.073 (0.025)	0.058 (0.025)	0.068 (0.025)	0.0818 J (0.1)	0.0783 J (0.1)	NA	NA
Xylenes (total)	10	0.007 (0.001)	ND (0.005)	ND (0.001)	ND (0.0005)	ND (0.001)	NA	2.3 (0.25)	2.4 (0.015)	3.3 (0.03)	3.91 (0.05)	3.88 (0.05)	ND (0.005)	ND (0.005)
Semivolatile Organic Compounds														
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0.066	0.0096 (0.000051)	NA	ND (0.0001)	0.000052 (0.00001)	0.000027 J (0.00005)	NA	0.004 (0.0005)	0.004 (0.0005)	0.0034 (0.00053)	0.00284 (0.000077)	0.00276 (0.000077)	NA	NA
Benzo(a)anthracene	0.0039	0.017 (0.00051)	NA	ND (0.0001)	0.000012 J (0.00001)	ND (0.00005)	NA	ND (0.0005)	ND (0.0005)	ND (0.00053)	0.000143 (0.000038)	0.0000935 (0.000038)	NA	NA
Benzo(a)pyrene	0.0002	0.012 (0.00051)	NA	ND (0.0001)	ND (0.00001)	ND (0.00005)	NA	ND (0.0005)	ND (0.0005)	ND (0.00053)	0.0000347 J (0.000038)	0.0000341 J (0.000038)	NA	NA
Benzo(b)fluoranthene	0.0012	0.014 (0.00051)	NA	ND (0.0001)	ND (0.00001)	ND (0.00005)	NA	ND (0.0005)	ND (0.0005)	ND (0.00053)	0.0000581 (0.000038)	0.0000416 (0.000038)	NA	NA
Benzo(g,h,i)perylene	0.00026	0.0032 (0.000051)	NA	ND (0.0001)	ND (0.00001)	ND (0.00005)	NA	ND (0.0005)	ND (0.0005)	ND (0.00053)	ND (0.000077)	ND (0.000077)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	0.012 (0.00051)	ND (0.005)	ND (0.0001)	ND (0.00001)	ND (0.00005)	NA	ND (0.0005)	ND (0.0005)	ND (0.00053)	0.0000564 J (0.000077)	0.0000447 J (0.000077)	ND (0.01)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1.9	0.028 (0.00051)	ND (0.005)	0.000144 (0.0001)	0.000019 J (0.00001)	0.000022 J (0.00005)	NA	0.014 (0.0005)	0.014 (0.0005)	0.014 (0.00053)	0.0207 (0.015)	0.0153 (0.015)	ND (0.01)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.000061)	ND (0.005)	0.000268 (0.0001)	ND (0.00003)	ND (0.00006)	NA	0.18 (0.003)	0.57 (0.003)	0.28 (0.0026)	0.261 (0.015)	0.207 (0.015)	ND (0.01)	ND (0.005)
Phenanthrene	1.1	0.04 (0.00061)	ND (0.005)	0.000113 (0.0001)	0.000055 J (0.00003)	ND (0.00006)	NA	0.025 (0.0005)	0.022 (0.0005)	0.026 (0.00053)	0.03 (0.015)	0.0238 (0.015)	ND (0.01)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.031 (0.00051)	ND (0.005)	0.000443 (0.0001)	0.000074 (0.00001)	0.000067 (0.00005)	NA	0.004 (0.0005)	0.003 (0.0005)	0.0024 (0.00053)	0.00145 (0.000077)	0.00116 (0.000077)	ND (0.01)	ND (0.005)
Per- and Polyfluoroalkyl Substances														
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons														
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Total)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	ND (0.001)	NA	NA	NA	ND (0.001)	NA	NA	NA	NA	NA	0.0015 (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (Dissolved)														
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.005	0.0021 (0.001)	NA	ND (0.003)	ND (0.00013)	ND (0.001)	NA	ND (0.003)	ND (0.0005)	ND (0.00052)	ND (0.001)	ND (0.001)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	URS-3	URS-4	URS-4	URS-4	URS-4	URS-5	URS-5	URS-5	URS-5	URS-5	URS-5	WP16-5	WP16-5
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Tank Group 07	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	8/24/2016	6/6/2006	1/9/2013	5/9/2016	8/24/2016	6/6/2006	7/1/2019	11/14/2019	5/6/2021	4/14/2022	4/14/2022	5/26/2005	6/9/2006
Comments	MSC											Field Duplicate		

J - Estimated Concentration

B - Detected in associated method blank.

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	WP9-1	WPM-11	WPM-11	WPM-11	WPM-8	WPM-8
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/25/2005	5/26/2005	6/9/2006	1/9/2013	5/26/2005	6/9/2006
Comments	MSC						
Water Quality							
pH	--	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds							
Benzene	0.005	1.7 (0.1)	ND (0.005)	ND (0.005)	0.0205 (0.001)	0.027 (0.005)	ND (0.005)
Cumene	3.5	ND (0.1)	ND (0.005)	ND (0.005)	ND (0.002)	0.027 (0.005)	0.04 (0.005)
Cyclohexane	53	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.00005	ND (0.000028)	ND (0.00029)	ND (0.000029)	ND (0.00002)	ND (0.000029)	ND (0.000029)
Ethyl Benzene	0.7	ND (0.1)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)
Methyl tert-butyl ether	0.02	ND (0.1)	ND (0.005)	ND (0.005)	ND (0.001)	0.024 (0.005)	0.023 (0.005)
tert Butyl alcohol	--	NA	NA	NA	NA	NA	NA
Toluene	1	ND (0.1)	ND (0.005)	ND (0.005)	ND (0.001)	ND (0.005)	ND (0.005)
1,2,4-Trimethylbenzene	0.53	NA	NA	NA	ND (0.002)	NA	NA
1,3,5-Trimethylbenzene	0.53	NA	NA	NA	ND (0.002)	NA	NA
Xylenes (total)	10	ND (0.1)	ND (0.005)	ND (0.005)	0.0022 (0.001)	ND (0.005)	ND (0.005)
Semivolatile Organic Compounds							
Acenaphthene	3.8	NA	NA	NA	NA	NA	NA
Acenaphthylene	5.8	NA	NA	NA	NA	NA	NA
Anthracene	0.066	NA	NA	NA	0.0248 (0.0005)	NA	NA
Benzo(a)anthracene	0.0039	NA	NA	NA	0.066 (0.005)	NA	NA
Benzo(a)pyrene	0.0002	NA	NA	NA	0.115 (0.005)	NA	NA
Benzo(b)fluoranthene	0.0012	NA	NA	NA	0.161 (0.005)	NA	NA
Benzo(g,h,i)perylene	0.00026	NA	NA	NA	0.118 (0.005)	NA	NA
Benzo(k)fluoranthene	0.00055	NA	NA	NA	NA	NA	NA
Chrysene	0.0019	ND (0.01)	0.3 (0.005)	0.028 (0.005)	0.149 (0.005)	0.002 (0.001)	ND (0.005)
Dibenz(a,h)anthracene	0.0006	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1.9	NA	NA	NA	NA	NA	NA
Fluoranthene	0.26	NA	NA	NA	NA	NA	NA
Fluorene	1.9	ND (0.01)	0.036 (0.005)	0.006 (0.005)	0.018 (0.0005)	0.006 (0.001)	ND (0.005)
Indeno(1,2,3-cd)pyrene	0.0023	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0.026	NA	NA	NA	NA	NA	NA
Naphthalene	0.1	ND (0.01)	ND (0.005)	ND (0.005)	0.00186 (0.0005)	ND (0.001)	ND (0.005)
Phenanthrene	1.1	0.014 (0.01)	0.2 (0.005)	0.014 (0.005)	0.0965 (0.005)	0.002 (0.001)	ND (0.005)
bis(2-Ethylhexyl)phthalate	0.006	NA	NA	NA	NA	NA	NA
Pyrene	0.13	0.022 (0.01)	0.4 (0.005)	0.05 (0.005)	0.265 (0.005)	0.009 (0.001)	ND (0.005)
Per- and Polyfluoroalkyl Substances							
Perfluorobutanesulfonic Acid (PFBS)	1.9	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	--	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	--	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	--	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.00007	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00007	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons							
Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons C9 - C44	--	NA	NA	NA	NA	NA	NA
Metals (Total)							
Arsenic	0.01	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA
Lead	0.005	ND (0.001)	ND (0.001)	ND (0.001)	NA	ND (0.001)	ND (0.001)
Manganese	0.3	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA
Metals (Dissolved)							
Arsenic	0.01	NA	NA	NA	NA	NA	NA
Barium	2	NA	NA	NA	NA	NA	NA
Chromium (total)	0.1	NA	NA	NA	NA	NA	NA
Cobalt	0.029	NA	NA	NA	NA	NA	NA
Lead	0.005	NA	NA	NA	ND (0.003)	NA	NA
Manganese	0.3	NA	NA	NA	NA	NA	NA
Nickel	0.1	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA
Vanadium	0.49	NA	NA	NA	NA	NA	NA
Zinc	2	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/L; detection limits in parentheses.
2 Only compounds with at least one detection are shown.
3 SL is an unknown qualifiers.
4 If the well does not fall within Tank Group 06 or 07, its area was designated as unassigned.
5 Only the five most recent results for each well is presented.
6 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table F2
Summary of Historical Groundwater Analytical Results
Tank Group 06 and 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Groundwater	WP9-1	WPM-11	WPM-11	WPM-11	WPM-8	WPM-8
Area	Used Aquifer	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned	Unassigned
Sample Date	(TDS ≤ 2500)	5/25/2005	5/26/2005	6/9/2006	1/9/2013	5/26/2005	6/9/2006
Comments	MSC						

J - Estimated Concentration

B - Detected in associated method blank.

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-148	10/17/2002	3.26	--
B-148	11/19/2002	3.10	--
B-148	11/24/2003	2.62	0.00
B-148	10/8/2004	2.74	0.02
B-148	5/19/2005	3.42	0.05
B-148	5/24/2006	4.76	1.91
B-148	11/7/2006	6.07	3.12
B-148	6/4/2007	3.70	0.00
B-148	11/15/2007	3.52	0.16
B-148	6/6/2008	4.08	0.68
B-148	11/25/2008	4.09	0.69
B-148	3/23/2009	4.07	0.46
B-148	6/22/2009	3.68	0.66
B-148	7/1/2009	3.73	0.57
B-148	7/29/2010	3.57	0.41
B-148	5/18/2011	3.89	0.22
B-148	5/9/2012	3.58	0.48
B-148	3/28/2013	3.59	0.58
B-148	7/12/2013	3.52	0.51
B-148	10/16/2013	3.73	0.48
B-148	5/14/2014	3.95	0.40
B-148	12/4/2014	4.06	0.65
B-148	2/18/2015	4.32	0.60
B-148	5/15/2015	4.08	0.69
B-148	11/19/2015	4.04	0.91
B-148	5/11/2016	4.00	0.89
B-148	12/1/2016	3.74	0.86
B-148	5/11/2017	3.88	0.50
B-148	6/20/2018	4.49	0.82
B-148	6/6/2019	4.09	1.04
B-148	1/3/2020	4.09	0.58
B-148	6/8/2020	4.22	0.83
B-148	4/20/2021	3.91	0.27
B-148	10/28/2021	3.31	0.04
B-148	3/9/2022	4.16	--
B-148	3/9/2023	4.27	--
B-148	4/14/2023	4.08	--
B-148	4/16/2024	1.48	--
B-149	10/17/2002	2.07	--
B-149	11/19/2002	1.73	--
B-149	11/24/2003	0.61	--
B-149	10/8/2004	0.86	--
B-149	5/19/2005	1.49	--
B-149	5/24/2006	1.21	--
B-149	11/7/2006	1.25	--
B-149	6/4/2007	2.56	--
B-149	11/15/2007	1.36	--
B-149	6/6/2008	1.99	--
B-149	11/25/2008	2.03	0.00
B-149	3/23/2009	2.44	--
B-149	6/22/2009	0.63	--
B-149	7/1/2009	0.82	--
B-149	7/29/2010	1.01	0.00
B-149	5/18/2011	1.60	--
B-149	5/9/2012	1.39	--
B-149	3/28/2013	1.37	--
B-149	7/12/2013	1.28	--
B-149	10/16/2013	1.37	--
B-149	5/14/2014	1.86	1.05
B-149	12/4/2014	1.58	0.72
B-149	2/13/2015	1.94	0.76
B-149	5/15/2015	2.40	0.47
B-149	11/19/2015	2.09	0.59
B-149	5/11/2016	1.43	0.67
B-149	12/1/2016	1.39	0.61
B-149	5/11/2017	1.69	0.54
B-149	6/20/2018	1.99	0.58
B-149	4/16/2019	1.32	0.43
B-149	6/6/2019	1.16	0.12
B-149	10/9/2019	-0.45	--
B-149	6/8/2020	0.95	0.16
B-149	4/20/2021	1.37	0.13
B-149	10/29/2021	1.01	0.16
B-149	3/9/2022	1.91	0.07
B-149	3/9/2023	2.02	--
B-149	4/14/2023	1.37	--
B-149	5/3/2023	0.72	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-149	8/8/2023	1.23	--
B-149	10/26/2023	2.72	--
B-149	2/15/2024	1.26	--
B-150	10/17/2002	2.23	--
B-150	11/19/2002	1.59	--
B-150	11/24/2003	0.48	--
B-150	10/8/2004	0.87	--
B-150	5/19/2005	2.68	1.43
B-150	5/24/2006	2.33	1.26
B-150	11/7/2006	2.28	1.27
B-150	6/4/2007	2.80	4.31
B-150	11/15/2007	1.94	0.65
B-150	6/6/2008	2.65	0.73
B-150	11/25/2008	3.47	1.69
B-150	3/23/2009	3.48	1.05
B-150	6/22/2009	3.25	2.79
B-150	7/1/2009	3.66	3.11
B-150	7/29/2010	3.63	1.80
B-150	5/18/2011	3.53	2.07
B-150	5/9/2012	3.87	2.48
B-150	3/28/2013	4.18	3.07
B-150	7/12/2013	4.18	3.19
B-150	10/16/2013	4.20	3.11
B-150	5/14/2014	3.93	3.19
B-150	12/4/2014	3.78	3.03
B-150	2/13/2015	3.93	2.85
B-150	5/15/2015	3.84	1.97
B-150	11/19/2015	3.89	2.41
B-150	5/11/2016	4.11	--
B-150	5/11/2016	4.01	3.31
B-150	8/19/2016	3.64	--
B-150	12/1/2016	3.50	2.62
B-150	5/11/2017	3.24	0.12
B-150	6/20/2018	4.13	2.80
B-150	7/5/2018	4.18	--
B-150	4/16/2019	3.41	2.43
B-150	6/6/2019	3.37	2.25
B-150	10/9/2019	3.33	1.31
B-150	11/7/2019	3.44	2.48
B-150	6/8/2020	3.23	2.42
B-150	4/20/2021	2.98	1.78
B-150	5/5/2021	2.94	1.61
B-150	10/28/2021	2.74	1.44
B-150	2/28/2022	3.78	2.82
B-150	3/9/2022	3.08	1.56
B-150	4/11/2022	3.47	2.72
B-150	3/9/2023	3.60	--
B-150	3/27/2023	4.86	0.37
B-150	3/28/2023	4.78	0.15
B-150	3/29/2023	4.68	0.08
B-150	3/30/2023	4.92	0.19
B-150	3/31/2023	4.68	0.10
B-150	4/3/2023	4.60	0.07
B-150	4/5/2023	4.68	0.15
B-150	4/7/2023	4.76	0.01
B-150	4/10/2023	4.78	0.02
B-150	4/11/2023	4.72	0.02
B-150	4/14/2023	1.30	0.07
B-150	4/14/2023	4.99	0.16
B-150	4/17/2023	4.99	0.11
B-150	4/17/2023	2.93	0.20
B-150	4/24/2023	5.15	0.10
B-150	5/1/2023	2.93	0.20
B-150	5/3/2023	1.11	0.20
B-150	5/5/2023	3.42	0.06
B-150	5/12/2023	3.67	0.03
B-150	5/15/2023	4.01	0.08
B-150	5/22/2023	4.50	0.11
B-150	5/26/2023	4.73	0.18
B-150	5/30/2023	4.95	0.19
B-150	6/2/2023	4.87	0.12
B-150	6/5/2023	5.07	0.14
B-150	6/8/2023	5.20	0.13
B-150	6/12/2023	5.23	0.13
B-150	6/19/2023	5.31	0.14
B-150	6/23/2023	4.91	0.18
B-150	6/26/2023	4.51	0.21

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-150	7/3/2023	4.13	0.71
B-150	7/6/2023	3.40	0.72
B-150	7/10/2023	2.89	0.29
B-150	7/14/2023	3.36	0.40
B-150	7/21/2023	3.17	0.67
B-150	7/25/2023	3.72	0.77
B-150	8/2/2023	4.19	0.79
B-150	8/8/2023	1.67	0.30
B-150	8/23/2023	4.00	0.01
B-150	8/29/2023	4.26	0.03
B-150	9/5/2023	4.71	0.03
B-150	9/12/2023	4.02	0.21
B-150	10/10/2023	4.05	0.29
B-150	10/18/2023	4.45	0.06
B-150	10/26/2023	2.80	0.04
B-150	11/17/2023	5.40	0.01
B-150	11/28/2023	4.41	0.25
B-150	12/11/2023	4.42	0.92
B-150	1/15/2024	4.86	1.98
B-150	1/25/2024	4.74	2.34
B-150	1/26/2024	2.69	0.16
B-150	2/2/2024	3.70	0.81
B-150	2/7/2024	4.14	0.66
B-150	2/15/2024	2.02	0.54
B-150	2/15/2024	3.99	0.54
B-150	2/21/2024	4.40	0.62
B-150	2/29/2024	4.82	0.46
B-150	3/7/2024	3.39	0.31
B-150	3/12/2024	3.39	0.20
B-150	3/20/2024	3.55	0.19
B-150	3/27/2024	3.10	0.19
B-150	4/2/2024	2.45	0.09
B-150	4/11/2024	1.99	0.56
B-150	4/12/2024	3.70	0.41
B-150	4/30/2024	1.75	--
B-150	4/30/2024	3.85	0.15
B-150	5/9/2024	4.00	0.15
B-150	5/14/2024	3.50	0.10
B-150	5/22/2024	3.57	0.03
B-150	5/28/2024	3.81	0.10
B-150	6/24/2024	1.43	0.20
B-150	7/3/2024	2.35	0.00
B-150	7/9/2024	2.41	0.01
B-150	7/16/2024	3.49	0.01
B-150	7/22/2024	3.88	--
B-150	8/12/2024	3.20	--
B-150	8/19/2024	3.30	--
B-150	9/6/2024	4.05	0.04
B-150	9/12/2024	4.19	0.05
B-150	9/19/2024	4.17	0.06
B-150	9/25/2024	4.31	0.02
B-150	10/4/2024	4.38	--
B-150	10/11/2024	4.33	0.01
B-150	10/15/2024	4.10	0.04
B-150	10/22/2024	4.10	0.03
B-150	10/28/2024	4.11	0.01
B-154	5/24/2006	1.92	--
B-154	11/7/2006	1.81	--
B-154	6/4/2007	3.04	--
B-154	11/15/2007	2.02	--
B-154	6/6/2008	2.63	--
B-154	11/25/2008	2.63	--
B-154	3/23/2009	3.04	--
B-154	6/22/2009	1.51	--
B-154	7/1/2009	1.60	--
B-154	7/29/2010	1.87	--
B-154	5/18/2011	2.40	--
B-154	5/9/2012	1.08	--
B-154	3/28/2013	0.87	--
B-154	7/12/2013	0.88	--
B-154	10/16/2013	0.91	--
B-154	5/14/2014	0.70	--
B-154	12/4/2014	0.84	--
B-154	2/13/2015	1.08	--
B-154	5/15/2015	1.91	--
B-154	11/19/2015	1.47	--
B-154	5/10/2016	1.11	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-154	5/11/2016	1.03	--
B-154	12/1/2016	0.75	--
B-154	5/11/2017	0.47	--
B-154	6/8/2020	-0.50	--
B-154	4/20/2021	-0.29	--
B-154	10/29/2021	-0.33	--
B-154	3/9/2022	-0.24	--
B-155	5/24/2006	2.96	--
B-155	11/7/2006	2.87	--
B-155	6/4/2007	3.56	--
B-155	11/15/2007	2.76	--
B-155	6/6/2008	3.13	--
B-155	11/25/2008	3.39	--
B-155	3/23/2009	3.58	--
B-155	6/22/2009	2.30	--
B-155	7/1/2009	2.38	--
B-155	7/29/2010	2.48	--
B-155	5/18/2011	2.87	--
B-155	5/9/2012	2.76	--
B-155	3/28/2013	2.78	--
B-155	7/12/2013	2.63	--
B-155	10/16/2013	2.89	--
B-155	5/14/2014	2.53	--
B-155	12/4/2014	2.66	--
B-155	2/13/2015	2.85	--
B-155	5/15/2015	3.57	--
B-155	11/19/2015	3.40	--
B-155	5/5/2016	3.07	--
B-155	5/11/2016	3.23	--
B-155	12/1/2016	2.95	--
B-155	5/11/2017	3.10	--
B-155	6/20/2018	2.51	--
B-155	6/7/2019	3.39	--
B-155	10/9/2019	4.01	--
B-155	6/8/2020	3.07	--
B-155	4/20/2021	3.61	--
B-155	10/29/2021	3.65	--
B-155	3/9/2022	4.17	--
B-155	3/9/2023	4.25	--
B-155	3/27/2023	6.51	--
B-155	4/10/2023	6.98	--
B-155	4/11/2023	6.62	--
B-155	4/14/2023	4.79	--
B-155	4/14/2023	7.84	--
B-155	4/17/2023	6.81	--
B-155	4/24/2023	6.99	--
B-155	5/1/2023	4.99	--
B-155	5/3/2023	3.12	--
B-155	5/5/2023	5.80	--
B-155	5/12/2023	5.97	--
B-155	5/15/2023	6.19	--
B-155	5/22/2023	6.50	--
B-155	5/26/2023	6.51	--
B-155	5/30/2023	6.66	--
B-155	6/2/2023	6.62	--
B-155	6/5/2023	6.87	--
B-155	6/8/2023	6.91	--
B-155	6/12/2023	6.99	--
B-155	6/19/2023	7.05	--
B-155	6/23/2023	6.44	--
B-155	6/26/2023	6.46	--
B-155	7/3/2023	5.61	--
B-155	7/6/2023	5.02	--
B-155	7/10/2023	4.91	--
B-155	7/14/2023	5.30	--
B-155	7/21/2023	4.91	--
B-155	7/25/2023	5.28	--
B-155	8/2/2023	5.65	--
B-155	8/8/2023	3.56	--
B-155	8/23/2023	5.99	--
B-155	8/29/2023	6.35	--
B-155	9/5/2023	6.71	--
B-155	9/12/2023	5.88	--
B-155	10/10/2023	5.97	--
B-155	10/18/2023	6.53	--
B-155	10/26/2023	4.75	--
B-155	11/17/2023	7.25	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-155	11/28/2023	6.31	--
B-155	12/11/2023	5.67	--
B-155	1/15/2024	5.39	--
B-155	1/26/2024	4.82	--
B-155	2/2/2024	5.19	--
B-155	2/7/2024	5.72	--
B-155	2/15/2024	3.70	--
B-155	2/15/2024	5.70	--
B-155	2/21/2024	5.98	--
B-155	2/29/2024	6.58	--
B-155	3/7/2024	5.19	--
B-155	3/12/2024	5.22	--
B-155	3/20/2024	5.31	--
B-155	3/27/2024	4.80	--
B-155	4/2/2024	3.85	--
B-155	4/11/2024	4.03	--
B-155	4/12/2024	6.01	--
B-155	4/30/2024	5.52	--
B-155	5/9/2024	5.61	--
B-155	5/14/2024	4.91	--
B-155	5/22/2024	5.11	--
B-155	5/28/2024	5.30	--
B-155	7/3/2024	3.87	--
B-155	7/9/2024	3.92	--
B-155	7/16/2024	5.44	--
B-155	7/22/2024	5.80	--
B-155	8/12/2024	5.51	0.31
B-155	8/19/2024	4.74	--
B-155	9/6/2024	6.57	0.06
B-155	9/12/2024	6.82	--
B-155	9/18/2024	6.75	--
B-155	9/25/2024	6.89	--
B-155	10/22/2024	5.65	--
B-155	10/28/2024	5.62	--
B-155	3/1/2032	6.51	--
B-156	5/24/2006	2.93	--
B-156	11/7/2006	3.21	--
B-156	6/4/2007	3.46	--
B-156	11/15/2007	3.89	--
B-156	6/6/2008	3.38	0.00
B-156	11/25/2008	3.60	--
B-156	3/23/2009	3.69	--
B-156	6/22/2009	2.66	--
B-156	7/1/2009	2.91	--
B-156	7/29/2010	3.13	--
B-156	5/18/2011	3.49	--
B-156	5/9/2012	3.38	--
B-156	3/28/2013	3.18	--
B-156	7/12/2013	3.33	--
B-156	10/16/2013	3.61	--
B-156	5/14/2014	3.04	--
B-156	12/4/2014	3.19	--
B-156	5/15/2015	3.99	--
B-156	11/19/2015	3.79	--
B-156	5/10/2016	3.39	--
B-156	5/11/2016	3.31	--
B-156	12/1/2016	3.71	--
B-156	5/11/2017	2.97	--
B-156	6/20/2018	4.35	--
B-156	6/6/2019	3.49	--
B-156	10/9/2019	3.79	--
B-156	11/5/2019	3.30	--
B-156	6/8/2020	3.32	0.01
B-156	4/20/2021	3.76	0.03
B-156	5/5/2021	3.52	0.02
B-156	10/29/2021	3.64	--
B-156	3/9/2022	4.23	--
B-156	4/11/2022	3.54	--
B-156	3/9/2023	4.45	--
B-156	4/14/2023	4.75	--
B-156	4/11/2024	2.78	0.01
B-163	5/24/2006	2.99	--
B-163	11/7/2006	1.98	--
B-163	6/4/2007	1.66	--
B-163	11/15/2007	2.07	--
B-163	6/6/2008	1.90	--
B-163	11/25/2008	2.45	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-163	6/22/2009	1.59	--
B-163	7/30/2010	2.04	--
B-163	5/18/2011	1.61	--
B-163	5/9/2012	2.32	--
B-163	3/28/2013	2.07	--
B-163	7/12/2013	2.43	--
B-163	10/16/2013	1.79	--
B-163	5/14/2014	1.54	--
B-163	12/4/2014	1.49	--
B-163	2/13/2015	1.37	--
B-163	5/15/2015	2.83	--
B-163	11/19/2015	2.58	--
B-163	5/10/2016	1.91	--
B-163	5/11/2016	1.74	--
B-163	12/1/2016	1.19	--
B-163	5/11/2017	2.17	--
B-163	6/20/2018	2.55	--
B-163	6/7/2019	2.04	--
B-163	10/9/2019	2.49	--
B-163	6/8/2020	1.65	--
B-163	4/20/2021	3.03	--
B-172	5/5/2016	2.29	--
B-172	8/19/2016	1.74	--
B-172	5/11/2017	2.23	--
B-172	6/20/2018	3.87	--
B-172	6/6/2019	1.72	--
B-172	10/9/2019	1.89	--
B-172	11/5/2019	1.63	--
B-172	6/8/2020	1.63	--
B-172	4/20/2021	1.92	--
B-172	5/7/2021	0.90	--
B-172	10/29/2021	1.93	--
B-172	3/9/2022	2.21	--
B-172	4/12/2022	0.85	--
B-177	2/20/2020	2.95	--
B-177	6/8/2020	2.43	--
B-177	4/20/2021	2.79	--
B-177	10/29/2021	2.56	--
B-177	3/9/2022	2.95	--
B-177	2/28/2023	6.75	--
B-177	3/9/2023	3.45	--
B-177	3/27/2023	6.61	0.01
B-177	4/7/2023	6.89	--
B-177	4/11/2023	6.84	--
B-177	4/14/2023	4.15	--
B-177	4/14/2023	7.01	--
B-177	4/17/2023	7.03	--
B-177	4/24/2023	7.27	--
B-177	5/1/2023	4.95	--
B-177	5/3/2023	2.26	--
B-177	5/5/2023	5.50	--
B-177	5/12/2023	5.79	--
B-177	5/15/2023	6.08	--
B-177	5/22/2023	6.60	--
B-177	5/26/2023	6.79	--
B-177	5/30/2023	7.06	--
B-177	6/2/2023	6.95	--
B-177	6/5/2023	7.11	--
B-177	6/8/2023	7.26	--
B-177	6/12/2023	7.28	--
B-177	6/19/2023	7.87	--
B-177	6/23/2023	6.81	--
B-177	6/26/2023	6.57	--
B-177	7/3/2023	5.65	--
B-177	7/6/2023	5.00	--
B-177	7/10/2023	4.95	--
B-177	7/14/2023	5.25	--
B-177	7/21/2023	4.80	--
B-177	7/25/2023	5.21	--
B-177	8/2/2023	5.68	--
B-177	8/8/2023	2.74	--
B-177	8/23/2023	6.18	--
B-177	8/29/2023	6.47	--
B-177	9/5/2023	6.91	--
B-177	9/12/2023	6.08	--
B-177	10/10/2023	6.91	--
B-177	10/18/2023	6.61	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-177	10/26/2023	4.08	--
B-177	11/17/2023	7.55	--
B-177	11/28/2023	6.44	--
B-177	12/11/2023	5.85	--
B-177	1/15/2024	5.23	--
B-177	1/26/2024	4.72	--
B-177	2/2/2024	5.13	--
B-177	2/7/2024	5.69	--
B-177	2/15/2024	2.82	--
B-177	2/15/2024	5.67	--
B-177	2/21/2024	5.99	--
B-177	2/29/2024	6.56	--
B-177	3/7/2024	5.05	--
B-177	3/12/2024	5.16	--
B-177	3/20/2024	5.39	--
B-177	3/27/2024	4.96	--
B-177	4/2/2024	4.34	--
B-177	4/11/2024	2.49	--
B-177	4/12/2024	5.52	--
B-177	4/23/2024	2.85	--
B-177	4/30/2024	5.76	--
B-177	5/9/2024	5.92	--
B-177	5/14/2024	5.55	--
B-177	5/22/2024	4.64	--
B-177	5/28/2024	5.81	--
B-178	2/19/2020	2.29	--
B-178	6/8/2020	1.87	--
B-178	4/20/2021	2.33	--
B-178	10/29/2021	1.94	--
B-178	3/9/2022	2.62	--
B-178	2/28/2023	6.35	--
B-178	3/9/2023	3.04	--
B-178	3/27/2023	6.32	--
B-178	4/7/2023	6.48	--
B-178	4/11/2023	6.62	--
B-178	4/14/2023	3.78	--
B-178	4/14/2023	6.76	--
B-178	4/17/2023	6.79	--
B-178	4/24/2023	7.03	--
B-178	5/1/2023	4.47	--
B-178	5/3/2023	1.97	--
B-178	5/5/2023	5.21	--
B-178	5/12/2023	4.58	--
B-178	5/15/2023	5.72	--
B-178	5/22/2023	6.20	--
B-178	5/26/2023	6.43	--
B-178	5/30/2023	6.77	--
B-178	6/2/2023	6.77	--
B-178	6/5/2023	6.93	--
B-178	6/8/2023	7.07	--
B-178	6/12/2023	7.11	--
B-178	6/19/2023	7.62	--
B-178	6/23/2023	6.49	--
B-178	6/26/2023	6.18	--
B-178	7/3/2023	5.38	--
B-178	7/6/2023	4.68	--
B-178	7/10/2023	4.58	--
B-178	7/14/2023	5.02	--
B-178	7/21/2023	4.50	--
B-178	7/25/2023	4.95	--
B-178	8/2/2023	5.38	--
B-178	8/8/2023	2.37	--
B-178	8/23/2023	5.84	--
B-178	8/29/2023	5.15	--
B-178	9/5/2023	6.60	--
B-178	9/12/2023	5.95	--
B-178	10/10/2023	6.64	--
B-178	10/18/2023	6.13	--
B-178	10/26/2023	3.79	--
B-178	11/17/2023	7.34	--
B-178	11/28/2023	6.28	--
B-178	12/11/2023	5.56	--
B-178	1/15/2024	4.90	--
B-178	1/26/2024	4.21	--
B-178	2/2/2024	4.85	--
B-178	2/7/2024	5.34	--
B-178	2/15/2024	2.45	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-178	2/15/2024	5.36	--
B-178	2/21/2024	5.65	--
B-178	2/29/2024	5.97	--
B-178	3/7/2024	5.15	--
B-178	3/12/2024	4.98	--
B-178	3/20/2024	5.29	--
B-178	3/27/2024	4.71	--
B-178	4/2/2024	4.21	--
B-178	4/11/2024	2.24	--
B-178	4/12/2024	5.00	--
B-178	4/30/2024	5.55	--
B-178	5/9/2024	5.64	--
B-178	5/14/2024	5.43	--
B-178	5/22/2024	4.45	--
B-178	5/28/2024	5.59	--
B-179	2/19/2020	2.93	--
B-179	6/8/2020	2.54	--
B-179	4/20/2021	2.85	--
B-179	10/29/2021	2.57	--
B-179	3/9/2022	3.34	--
B-190	2/28/2023	4.50	--
B-190	3/27/2023	4.40	--
B-190	4/7/2023	4.64	--
B-190	4/11/2023	4.60	--
B-190	4/14/2023	4.83	0.04
B-190	4/17/2023	4.78	--
B-190	4/24/2023	5.01	--
B-190	5/1/2023	2.26	--
B-190	5/5/2023	3.07	--
B-190	5/12/2023	3.37	--
B-190	5/15/2023	3.69	0.01
B-190	5/22/2023	4.33	0.01
B-190	5/26/2023	4.55	0.01
B-190	5/30/2023	4.71	--
B-190	6/2/2023	4.70	0.02
B-190	6/5/2023	4.86	--
B-190	6/8/2023	4.99	0.01
B-190	6/12/2023	5.05	0.02
B-190	6/19/2023	5.14	0.01
B-190	6/23/2023	4.69	0.01
B-190	6/26/2023	4.27	0.01
B-190	6/26/2023	4.30	--
B-190	7/3/2023	3.33	--
B-190	7/6/2023	2.56	--
B-190	7/10/2023	2.45	--
B-190	7/14/2023	2.92	0.01
B-190	7/21/2023	2.42	0.01
B-190	7/25/2023	2.91	--
B-190	8/2/2023	3.40	0.09
B-190	8/23/2023	3.99	0.12
B-190	8/29/2023	4.36	0.18
B-190	9/5/2023	4.87	0.25
B-190	9/12/2023	3.69	0.05
B-190	10/10/2023	3.64	0.08
B-190	10/18/2023	4.45	0.13
B-190	11/17/2023	5.30	--
B-190	11/28/2023	3.92	0.01
B-190	12/11/2023	3.39	--
B-190	1/15/2024	2.82	0.01
B-190	1/26/2024	2.01	--
B-190	2/2/2024	2.70	--
B-190	2/7/2024	3.16	--
B-190	2/15/2024	3.19	--
B-190	2/21/2024	3.55	0.02
B-190	2/29/2024	4.37	0.10
B-190	3/7/2024	2.39	--
B-190	3/12/2024	2.79	--
B-190	3/20/2024	3.06	--
B-190	3/27/2024	2.61	--
B-190	4/2/2024	1.94	--
B-190	4/12/2024	3.00	--
B-190	4/30/2024	4.42	--
B-190	5/9/2024	3.60	--
B-190	5/14/2024	3.24	--
B-190	5/22/2024	3.31	--
B-190	5/28/2024	3.47	--
B-191	2/28/2023	4.49	--

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-191	3/27/2023	4.37	--
B-191	4/7/2023	4.58	--
B-191	4/11/2023	4.60	--
B-191	4/14/2023	4.74	--
B-191	4/17/2023	4.74	--
B-191	4/24/2023	5.00	--
B-191	5/1/2023	1.92	--
B-191	5/5/2023	2.89	--
B-191	5/12/2023	3.17	--
B-191	5/15/2023	3.50	--
B-191	5/22/2023	4.34	--
B-191	5/26/2023	4.52	--
B-191	5/30/2023	4.70	--
B-191	6/2/2023	4.65	--
B-191	6/5/2023	4.85	--
B-191	6/8/2023	4.96	--
B-191	6/12/2023	5.01	--
B-191	6/19/2023	5.09	--
B-191	6/23/2023	4.63	--
B-191	6/26/2023	4.30	--
B-191	7/3/2023	3.12	--
B-191	7/6/2023	2.24	--
B-191	7/10/2023	2.05	--
B-191	7/14/2023	2.51	--
B-191	7/21/2023	2.10	--
B-191	7/25/2023	2.70	--
B-191	8/2/2023	2.98	--
B-191	8/23/2023	3.78	--
B-191	8/29/2023	4.21	--
B-191	9/5/2023	4.65	--
B-191	9/12/2023	3.49	--
B-191	10/10/2023	3.35	0.03
B-191	10/18/2023	4.33	--
B-191	11/17/2023	5.31	--
B-191	11/28/2023	4.74	--
B-191	12/11/2023	3.11	--
B-191	1/15/2024	2.56	--
B-191	1/26/2024	1.73	--
B-191	2/2/2024	2.50	--
B-191	2/7/2024	2.95	--
B-191	2/15/2024	3.00	--
B-191	2/21/2024	3.27	--
B-191	2/29/2024	4.10	--
B-191	3/7/2024	2.06	--
B-191	3/12/2024	2.62	--
B-191	3/20/2024	2.91	--
B-191	3/27/2024	2.44	--
B-191	4/2/2024	1.55	--
B-191	4/12/2024	2.85	--
B-191	4/30/2024	4.29	--
B-191	5/9/2024	3.52	--
B-191	5/14/2024	3.20	--
B-191	5/22/2024	3.14	--
B-191	5/28/2024	3.28	--
B-191	7/3/2024	2.10	--
B-191	7/9/2024	2.10	--
B-191	7/16/2024	3.02	--
B-191	7/22/2024	3.45	--
B-191	8/12/2024	2.81	--
B-191	8/19/2024	2.95	--
B-191	9/6/2024	3.70	--
B-191	9/12/2024	3.74	--
B-191	9/19/2024	3.84	--
B-191	9/25/2024	3.94	--
B-191	10/4/2024	3.95	--
B-191	10/11/2024	3.96	--
B-191	10/15/2024	3.83	--
B-191	10/22/2024	3.82	--
B-191	10/28/2024	3.87	--
B-192	3/27/2023	4.65	0.57
B-192	3/28/2023	4.80	0.59
B-192	4/7/2023	5.03	0.71
B-192	4/11/2023	4.75	0.46
B-192	4/11/2023	4.45	0.03
B-192	4/14/2023	4.73	0.23
B-192	4/17/2023	4.73	0.21
B-192	4/17/2023	4.48	0.03

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-192	4/24/2023	5.20	0.47
B-192	5/1/2023	2.21	0.16
B-192	5/5/2023	3.07	0.23
B-192	5/12/2023	3.37	0.18
B-192	5/15/2023	3.86	0.37
B-192	5/22/2023	4.06	--
B-192	5/26/2023	4.68	0.44
B-192	5/30/2023	4.82	0.41
B-192	6/2/2023	4.38	--
B-192	6/5/2023	4.84	0.27
B-192	6/8/2023	4.99	0.30
B-192	6/12/2023	5.10	0.37
B-192	6/19/2023	5.23	0.43
B-192	6/23/2023	4.90	0.36
B-192	6/26/2023	4.14	0.36
B-192	6/26/2023	4.06	0.15
B-192	7/3/2023	3.42	0.33
B-192	7/6/2023	2.48	0.13
B-192	7/6/2023	2.42	0.02
B-192	7/10/2023	2.50	0.24
B-192	7/14/2023	3.03	0.33
B-192	7/21/2023	2.51	0.28
B-192	7/25/2023	3.13	0.45
B-192	8/2/2023	3.72	0.70
B-192	8/23/2023	4.35	0.79
B-192	8/29/2023	4.71	0.83
B-192	9/5/2023	4.36	0.02
B-192	9/12/2023	3.78	0.39
B-192	10/10/2023	4.58	1.37
B-192	10/18/2023	5.07	1.05
B-192	11/17/2023	5.35	0.44
B-192	11/28/2023	4.13	0.41
B-192	12/11/2023	3.75	0.60
B-192	1/15/2024	3.23	0.62
B-192	1/26/2024	2.33	0.46
B-192	2/2/2024	3.51	0.62
B-192	2/7/2024	3.51	0.62
B-192	2/15/2024	3.45	0.51
B-192	2/21/2024	3.68	0.40
B-192	2/29/2024	4.71	0.70
B-192	3/7/2024	2.45	0.20
B-192	3/12/2024	2.62	0.10
B-192	3/20/2024	2.89	0.09
B-192	3/27/2024	2.89	0.09
B-192	4/2/2024	1.47	0.01
B-192	4/12/2024	3.24	0.42
B-192	4/30/2024	3.50	0.45
B-192	5/9/2024	3.99	0.79
B-192	5/14/2024	3.48	0.07
B-192	5/22/2024	3.17	0.02
B-192	5/28/2024	3.41	0.05
B-192	7/3/2024	1.89	0.14
B-192	7/9/2024	2.05	0.24
B-192	7/16/2024	3.84	1.07
B-192	7/22/2024	4.45	1.25
B-192	8/12/2024	2.57	0.30
B-192	8/19/2024	3.67	1.02
B-192	9/6/2024	3.63	0.10
B-192	9/12/2024	3.98	0.36
B-192	9/19/2024	3.91	0.29
B-192	9/25/2024	3.83	0.04
B-192	10/4/2024	3.81	0.03
B-192	10/11/2024	3.80	0.01
B-192	10/15/2024	3.61	0.03
B-192	10/22/2024	3.64	0.01
B-192	10/28/2024	3.70	0.05
B-193	3/27/2023	4.64	1.06
B-193	3/28/2023	4.88	1.16
B-193	4/7/2023	5.03	1.20
B-193	4/11/2023	4.82	1.06
B-193	4/11/2023	4.19	0.17
B-193	4/14/2023	4.61	0.62
B-193	4/17/2023	4.63	0.63
B-193	4/17/2023	4.17	0.07
B-193	4/24/2023	4.61	0.36
B-193	5/1/2023	1.90	--
B-193	5/5/2023	2.70	0.13

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-193	5/12/2023	2.97	0.11
B-193	5/15/2023	3.39	0.25
B-193	5/22/2023	3.96	0.30
B-193	5/26/2023	4.17	0.38
B-193	5/30/2023	4.42	0.48
B-193	6/2/2023	4.21	0.27
B-193	6/5/2023	4.38	0.25
B-193	6/8/2023	4.33	0.10
B-193	6/12/2023	4.53	0.26
B-193	6/19/2023	4.66	0.28
B-193	6/23/2023	4.13	0.23
B-193	6/26/2023	3.93	0.20
B-193	6/26/2023	3.90	0.02
B-193	7/3/2023	2.83	0.08
B-193	7/6/2023	2.12	--
B-193	7/10/2023	2.14	--
B-193	7/14/2023	2.39	0.01
B-193	7/21/2023	2.02	--
B-193	7/25/2023	2.41	0.06
B-193	8/2/2023	3.01	0.25
B-193	8/23/2023	3.39	0.15
B-193	8/29/2023	3.86	0.36
B-193	9/5/2023	4.93	1.02
B-193	9/12/2023	3.22	0.15
B-193	10/10/2023	3.22	0.15
B-193	10/18/2023	4.02	0.37
B-193	11/17/2023	4.63	0.08
B-193	11/28/2023	3.42	0.05
B-193	12/11/2023	2.90	0.05
B-193	1/15/2024	2.37	0.01
B-193	1/26/2024	1.71	0.02
B-193	2/2/2024	2.24	0.04
B-193	2/7/2024	3.02	0.29
B-193	2/15/2024	2.83	0.10
B-193	2/21/2024	3.19	0.16
B-193	2/29/2024	4.05	0.37
B-193	3/7/2024	2.19	0.05
B-193	3/12/2024	2.37	0.12
B-193	3/20/2024	2.50	0.05
B-193	3/27/2024	1.97	0.02
B-193	4/2/2024	1.20	0.10
B-193	4/12/2024	3.05	0.13
B-193	4/30/2024	2.90	0.09
B-193	5/9/2024	3.15	0.15
B-193	5/14/2024	2.45	0.07
B-193	5/22/2024	2.76	0.01
B-193	5/28/2024	2.71	0.02
B-193	7/3/2024	1.39	--
B-193	7/9/2024	1.43	--
B-193	7/16/2024	2.87	0.15
B-193	8/12/2024	2.46	0.18
B-193	8/19/2024	2.53	0.07
B-193	9/6/2024	3.27	0.09
B-193	9/12/2024	3.50	0.22
B-193	9/19/2024	3.40	0.17
B-193	9/25/2024	3.45	0.01
B-193	10/4/2024	3.40	0.01
B-193	10/11/2024	6.90	--
B-193	10/15/2024	6.63	--
B-193	10/22/2024	3.14	0.01
B-193	10/28/2024	3.15	0.01
B-194	3/27/2023	4.99	1.49
B-194	3/28/2023	5.31	1.63
B-194	4/7/2023	5.51	1.75
B-194	4/11/2023	5.15	1.40
B-194	4/11/2023	4.10	0.16
B-194	4/14/2023	4.93	0.91
B-194	4/17/2023	4.93	0.95
B-194	4/17/2023	4.32	0.17
B-194	4/24/2023	4.80	0.57
B-194	5/1/2023	2.26	0.29
B-194	5/5/2023	2.78	0.14
B-194	5/12/2023	2.98	0.06
B-194	5/15/2023	3.31	0.11
B-194	5/22/2023	3.93	0.22
B-194	5/26/2023	4.10	0.28
B-194	5/30/2023	4.34	0.38

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-194	6/2/2023	4.13	0.20
B-194	6/5/2023	4.45	0.31
B-194	6/8/2023	4.42	0.18
B-194	6/12/2023	4.51	0.22
B-194	6/19/2023	4.63	0.24
B-194	6/23/2023	4.02	0.14
B-194	6/26/2023	3.89	0.14
B-194	6/26/2023	3.86	0.02
B-194	7/3/2023	2.91	0.09
B-194	7/6/2023	2.15	0.01
B-194	7/6/2023	2.58	--
B-194	7/10/2023	2.08	0.03
B-194	7/14/2023	2.31	0.04
B-194	7/21/2023	2.06	0.02
B-194	7/25/2023	2.55	0.13
B-194	8/2/2023	3.04	0.22
B-194	8/23/2023	3.24	0.01
B-194	8/29/2023	3.73	0.18
B-194	9/5/2023	4.24	0.30
B-194	9/12/2023	3.13	0.05
B-194	10/10/2023	3.13	0.05
B-194	10/18/2023	3.78	0.04
B-194	11/17/2023	4.69	0.16
B-194	11/28/2023	3.49	0.02
B-194	12/11/2023	3.03	0.04
B-194	1/15/2024	2.72	0.25
B-194	1/26/2024	2.24	0.43
B-194	2/2/2024	2.65	0.37
B-194	2/7/2024	3.15	0.36
B-194	2/15/2024	3.10	0.27
B-194	2/21/2024	3.40	0.33
B-194	2/29/2024	4.14	0.43
B-194	3/7/2024	2.50	0.24
B-194	3/12/2024	2.49	0.20
B-194	3/20/2024	2.52	0.02
B-194	3/27/2024	2.02	0.06
B-194	4/2/2024	1.55	0.24
B-194	4/12/2024	2.95	0.10
B-194	4/30/2024	2.86	0.01
B-194	5/9/2024	2.95	0.15
B-194	5/14/2024	2.20	0.01
B-194	5/22/2024	2.51	0.01
B-194	5/28/2024	2.45	0.03
B-194	7/3/2024	0.80	0.01
B-194	7/9/2024	0.86	0.01
B-194	7/16/2024	2.21	--
B-194	8/12/2024	5.36	--
B-194	8/19/2024	5.56	--
B-194	10/4/2024	6.88	--
B-194	10/11/2024	6.90	--
B-194	10/15/2024	6.63	--
B-194	10/22/2024	6.88	--
B-194	10/28/2024	6.68	--
B-195	3/27/2023	5.20	1.32
B-195	3/28/2023	5.54	1.51
B-195	4/7/2023	5.68	1.57
B-195	4/11/2023	5.43	1.41
B-195	4/11/2023	4.61	0.22
B-195	4/14/2023	5.02	0.72
B-195	4/17/2023	5.09	0.78
B-195	4/17/2023	4.64	0.07
B-195	4/24/2023	5.00	0.46
B-195	5/1/2023	2.89	0.45
B-195	5/5/2023	3.07	0.04
B-195	5/12/2023	3.36	0.05
B-195	5/15/2023	3.72	0.15
B-195	5/22/2023	4.28	0.25
B-195	5/26/2023	4.42	0.33
B-195	5/30/2023	4.63	0.40
B-195	6/2/2023	4.40	0.20
B-195	6/5/2023	4.75	0.32
B-195	6/8/2023	4.74	0.24
B-195	6/12/2023	4.77	0.20
B-195	6/19/2023	4.90	0.19
B-195	6/23/2023	4.21	0.14
B-195	6/26/2023	4.15	0.15
B-195	6/26/2023	4.11	0.02

Table F3
Historical Gauging Information
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Measurement Date	Depth to Water (ft)	LNAPL Thickness (ft)
B-195	7/3/2023	3.21	0.08
B-195	7/6/2023	2.53	--
B-195	7/10/2023	2.47	--
B-195	7/14/2023	2.78	0.02
B-195	7/21/2023	2.44	0.01
B-195	7/25/2023	2.79	--
B-195	8/2/2023	3.21	--
B-195	8/23/2023	3.61	--
B-195	8/29/2023	3.92	--
B-195	9/5/2023	4.29	--
B-195	9/12/2023	4.47	--
B-195	10/10/2023	4.47	--
B-195	10/18/2023	4.18	0.11
B-195	11/17/2023	4.68	--
B-195	11/28/2023	3.93	0.08
B-195	12/11/2023	3.75	0.60
B-195	1/15/2024	3.17	0.49
B-195	1/26/2024	3.02	1.05
B-195	2/2/2024	2.96	0.51
B-195	2/7/2024	3.47	0.28
B-195	2/15/2024	3.41	0.20
B-195	2/21/2024	3.88	0.45
B-195	2/29/2024	4.59	0.53
B-195	3/7/2024	2.85	0.09
B-195	3/12/2024	2.65	0.10
B-195	3/20/2024	2.85	0.24
B-195	3/27/2024	2.30	0.10
B-195	4/2/2024	1.75	0.15
B-195	4/12/2024	3.32	0.03
B-195	4/30/2024	2.90	0.09
B-195	5/9/2024	2.90	0.09
B-195	5/14/2024	2.37	0.05
B-195	5/22/2024	3.02	0.05
B-195	5/28/2024	2.69	0.08
B-195	7/3/2024	1.45	0.12
B-195	7/9/2024	1.49	0.11
B-195	7/16/2024	2.85	0.03
B-195	8/12/2024	4.68	--
B-195	8/19/2024	5.85	0.46
B-195	9/12/2024	6.84	0.21
B-195	9/19/2024	6.70	0.15
B-195	9/25/2024	6.72	0.03
B-195	10/4/2024	6.68	0.01
B-195	10/11/2024	6.72	0.02
B-195	10/15/2024	6.43	--
B-195	10/22/2024	6.47	--
B-195	10/28/2024	6.46	0.01
B-41	12/18/1995	0.87	--
B-41	11/18/1996	1.33	--
B-41	10/31/2002	0.59	--

Appendix G

Tank Registration Amendment Forms

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

July 21, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401

Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Process Area

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PA DEP's) Storage Tank Registration/Permitting Application Form(s) for the removal of the following Five (5) Aboveground storage tank(s) located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point Processing Area.

Removed					
Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Proc Area	51-33624	011A	GP-1047	N/A	07/06/2022
Girard Point Proc Area	51-33624	047A	GP-1101	P-137 (GP)	07/07/2022
Girard point Proc Area	51-33624	046A	GP-767	P-135 (GP)	07/08/2022
Girard point Proc Area	51-33624	044A	GP-894	N/A	07/11/2022
Girard point Proc Area	51-33624	033A	GP-1088	N/A	07/08/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.
Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.

Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2		
3144 West Passyunk Avenue			
Address Last Line – City	**State**	**ZIP+4**	**Country**
Philadelphia	PA	19145	USA
Client Contact Last Name	**First Name**	**MI**	**Suffix**
Bowman	Gary	P	Sr.
Client Contact Title		**Phone**	**Ext**
President		610-636-4574	
E-mail Address			**FAX**
gbowman@northstar.com			

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
011A	T	R	F	1/1/1989	07/06/2022	158,340		Caustic, Fresh		
047A	T	R	F	1/1/1957	07/07/2022	84,000		Recovered Oil		
046A	T	R	F	1/1/1960	07/08/2022	42,000		Recovered Oil		
044A	T	R	F	1/1/1972	07/11/2022	8,022		Caustic, Fresh		
033A	T	R	F	1/1/1953	07/08/2022	26,500		Caustic Fresh		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 011A	Tank # 47A	Tank # 46A	Tank # 44A	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☒	☐	☐
3. Closure document kept on file by owner.	☒	☒	☒	☒	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

	President	07/13/2022
Owner Signature	**Title**	**Date**

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☒ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		**Employer ID# (EIN)**		**Dun & Bradstreet ID#**
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19124	USA	
Contact Title		**Phone**	**Ext.**	
President		610-636-4574		
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
011A	Brian Gerner	API 650	5341	AFMX	1631		7/20/22
47A	Brian Gerner	API 650	5341	AFMX	1631		7/20/22
46A	Brian Gerner	API 12C	5341	AFMX	1631		7/20/22
44A	Brian Gerner	API 12C	5341	AFMX	1631		7/20/22
033A	Brian Gerner	API 12C	5431	AFMX	1631		7/20/22

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

2250 E Adams Ave • Philadelphia, PA 19124Office:
215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

May 25, 2023

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East MainStreet
Norristown, Pennsylvania 19401

Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PESRM)
PADEP Storage Tanks Registration/Permitting Application Form PADEP Facility ID #51-33624 – Girard Point Process Area

To whom it may concern:

NorthStar Contracting Group, Inc. as the Facility Operator and on behalf of the former Philadelphia Energy Solutions Refining and Marketing LLC, please find attached the Pennsylvania Department of Environmental Protection's Storage Tank Registration/Permitting Application Form(s)for the removal of the following one (1) Aboveground Storage Tank(s) located at the former Girard Point Processing Area.

AST(s) Removed from Girard Point Process Area – May (2023) - Facility ID# - (51-33624)				
Item #	**PADEP Tank reg. #**	**AMS Tank ID #**	**Facility ID#**	**Removal Date**
1.	003A	P-032	GP 273	05/25/2023

If there are any questions, I can be reached via phone or email at 440-228-1524 / rarmstrong@nothstar.com

Respectfully Submitted,

Robert Armstrong Sr. Project Manager
NorthStar Contracting Group, Inc.

Enclosures: Storage Tank Registration/Permitting Application Form(s)

cc:

Anne Garr (Hilco)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing LLC	61-1689574	

Individual Last Name	First Name	MI	Suffix	SSN
Garr	Anne			

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2
111 S Wacker Drive	Suite 3000

Address Last Line – City	State	ZIP+4	Country
Chicago	IL	60606	USA

Client Contact Last Name	First Name	MI	Suffix
Garr	Anne		

Client Contact Title		Phone	Ext
Assistant Secretary	Philadelphia Energy Solutions Refining and Marketing LLC	(312)283-4469	

E-mail Address	FAX
Agarr@hilcoglobal.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Philadelphia

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact | **Title** | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
003A	C	R	M	1941	5/25/2023	3,385,200	Other	Vacuum Gas Oil		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

Overfill Prevention (7)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name **Phila Ref Girard Point**

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 003A	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Anne Garr

Owner Signature	Anne R. Garr	Title	Assistant Secretary	Date	5/31/2023

Information & Invoices should be sent to:

☒ **Tank Owner Contact**

☐ **Site Contact**
☐ **Facility Operator**
☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name			Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing LLC			61-1689574	
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Garr	Anne			
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2			
111 S Wacker Drive	Suite 3000			
Address Last Line – City		**State**	**ZIP+4**	**Country**
Chicago		IL	60606	US
Contact Title			**Phone**	**Ext.**
Assistant Secretary	Philadelphia Energy Solutions Refining and Marketing LLC		(312) 283-4469	
E-mail Address				
agarr@hilcoglobal.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
003A	Brian Gerner	API 12C	5431	AFMX	1631		05/25/2023

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

May 05, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401
Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tank Registration/Permitting Application Form for the removal of the following one (1) aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point site.

Removed					
Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Refinery	51-33624	029A	GP-494	P-039	04/14/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.

Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.
Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

2630-PM-BECB0514 Rev. 6/2019
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 West Passyunk Avenue				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19145	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr.	
Client Contact Title		**Phone**	**Ext**	
President		610-636-4574		
E-mail Address			**FAX**	
gbowman@northstar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID#	Facility Name	Facility Kind

Facility Location Line 1 (if different than Site Location)	Facility Location Line 2

Facility Location Last Line - City	State	ZIP+4

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure	Feet	--or--	Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☐ North American Datum of 1983 ☐ World Geodetic System of 1984		
Horizontal Collection Method Code			
Reference Point Code			
Altitude	Feet	--or--	Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☐ The North American Vertical Datum of 1988 (NAVD88)		
Altitude (Vertical) Location Datum Collection Method Code			
Geometric Type Code			
Data Collection Date			

Source Map Scale Number		Inch(es)	=	Feet
	--or--	Centimeter(s)	=	Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID#	Client Type / Code

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#

Individual Last Name	First Name	MI	Suffix	SSN

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2

Address Last Line – City	State	ZIP+4	Country

Client Contact Last Name	First Name	MI	Suffix

Client Contact Title	Phone	Ext

E-mail Address	FAX

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
029A	T	R	F	1965	04/14/2022	1,260,000		Main Frac Bottoms		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection -- Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 029A	Tank #	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	05/05/2022

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☒ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
029A	Brian Gerner	API 650	5341	AFMX	1631		5/3/2021

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

June 14, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401

Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PA DEP's) Storage Tank Registration/Permitting Application Form(s) for the removal of the following one (1) Aboveground storage tank(s) located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point Processing Area.

Removed					
Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Refinery	51-33624	066A	GP-973	N/A	05/31/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.
Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.

Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr.	

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2
3144 West Passyunk Avenue	

Address Last Line – City	State	ZIP+4	Country
Philadelphia	PA	19145	USA

Client Contact Last Name	First Name	MI	Suffix
Bowman	Gary	P	Sr.

Client Contact Title	Phone	Ext
President	610-636-4574	

E-mail Address	FAX
gbowman@northstar.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# 51-33624 Facility Name Phila Ref Girard Point Proc Area

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
066A	T	R	F	2006	5/31/2022	53,000		Fresh Caustic		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point Proc Area

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 066A	Tank #	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☐	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☐	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	6/6/2021

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
066A	Brian Gerner	API 650	5341	AFMX	1631		6/6/2022

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

September 9, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401

Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tank Registration/Permitting Application Forms for the removal of the following two (2) Aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point Processing Area.

Removed					
Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Refinery	51-33624	O16A	GP-227	P-147 (GP)	8/26/2022
Girard Point Refinery	51-33624	022A	GP-272	P- 012 (GP)	9/9/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.
Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.

Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leopnardo (Hilco)

2630-PM-BECB0514 Rev. 6/2019
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Process Area Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 West Passyunk Avenue				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19145	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr.	
Client Contact Title		**Phone**	**Ext**	
President		610-636-4574		
E-mail Address			**FAX**	
gbowman@northstar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# 51-33624 Facility Name Girard Point Process Area

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
016A	C	R	F	1954	08-26-2022	3,385,200	Main Frac Bottoms			
022A	C	R	F	1941	09-09-2022	3,045,000	Recovered Oil			

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Girard Point Process Area

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 016A	Tank # 022A	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☒	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	09-09-2022

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
016A	Brian Gerner	API 12C	5341	AFMX	1631		9/9/2022
022A	Brian Gerner	API 12C	5341	AFMX	1631		9/9/2022

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

May 17, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401
Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tank Registration/Permitting Application Form for the removal of the following four (4) aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point site.

Removed					
Facility Name	**PADEP Facility ID #**	**PADEP Tank ID #**	**Owner Tank ID #**	**AMS Tank ID #**	**Removal Date**
Girard Point Refinery	51-33624	027A	GP-285	P-015	05/02/2022
Girard Point Refinery	51-33624	028A	GP-286	P-016	05/05/2022
Girard Point Refinery	51-33624	026A	GP-282	P-036	05/13/2022
Girard Point Refinery	51-33624	004A	GP-284	P-037	05/10/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.

Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.
Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33624	Site ID#
Facility ID #	Account #
	Auth ID#
Phila Ref Girard Point	APS ID#
Facility Name	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

*** For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)
298341		☐ Volunteer Fire Co/EMS Org ☐ State Govt ☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr.	

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2
3144 West Passyunk Avenue	

Address Last Line – City	State	ZIP+4	Country
Philadelphia	PA	19145	USA

Client Contact Last Name	First Name	MI	Suffix
Bowman	Gary	P	Sr.

Client Contact Title	Phone	Ext
President	610-636-4574	

E-mail Address	FAX
gbowman@northstar.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**

Horizontal Accuracy Measure Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
027A	T	R	F	1948	05/02/2022	3,045,000		Light naptha		
028A	T	R	F	1948	05/05/2022	3,045,000		Heavy naptha		
026A	T	R	F	1947	05/13/2022	3,385,200		Vacuum gas oil		
004A	T	R	F	1948	05/10/2022	3,385,200		Vacuum gas oil		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
	027A	**028A**	**026A**	**004A**		
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☒	☐	☐
3. Closure document kept on file by owner.	☒	☒	☒	☒	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	05/17/2022

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☒ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
027A	Brian Gerner	API 12C	5341	AFMX	1631		5/17/22
028A	Brian Gerner	API 12C	5341	AFMX	1631		5/17/22
026A	Brian Gerner	API 12C	5341	AFMX	1631		5/17/22
004A	Brian Gerner	API 12C	5341	AFMX	1631		5/17/22

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

JD2 Environmental Inc.
800 East Washington Street • West Chester, PA 19380 • 610.430.8151 • 610.430.8016 Fax • www.jd2env.com

October 28, 2021

VIA EMAIL (ELECTRONIC SUBMISSION)

Pennsylvania Department of Environmental Protection
Central Office - Division of Storage Tanks
Rachel Carson State Office Building
400 Market Street
Harrisburg, Pennsylvania 17101

Subject: **Philadelphia Energy Solutions Refining and Marketing, LLC (PES)**
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 - Girard Point Refinery

Dear PADEP:

On behalf of our client, JD2 Environmental, Inc. (JD2) is attaching the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tanks Registration/Permitting Application Form for the removal of the following aboveground storage tanks (ASTs):

Facility Name	PADEP Facility ID #	PADEP Tank ID #	Owner Tank ID #	AMS Tank ID #	Removal Date
Girard Point Refinery	51-33624	005A	GP 1117	P-024	10/4/2021
Girard Point Refinery	51-33624	030A	GP 1116	P-001	10/4/2021

If you have any questions regarding this submittal, please do not hesitate to contact me at (610) 430-8151.

Sincerely yours,

JD2 ENVIRONMENTAL, INC.

Kristian Satterthwaite

Kristian Satterthwaite
Environmental Scientist
PADEP Inspector #5081

KS:wc
Attachment

cc: REPSG

2630-PM-BECB0514 Rev. 6/2019
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2		
3144 West Passyunk Avenue			
Address Last Line – City	**State**	**ZIP+4**	**Country**
Philadelphia	PA	19145	USA
Client Contact Last Name	**First Name**	**MI**	**Suffix**
Bowman	Gary	P.	Sr.
Client Contact Title		**Phone**	**Ext**
President		610-636-4574	
E-mail Address			**FAX**
Gbowman@northstar.com			

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

County Name | Municipality | City ☐ Boro ☐ Twp ☐ State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
005A	T	R	F	01/01/1953	10/04/2021	1,016,400		Udex Feed		
030A	T	R	F	01/01/1953	10/04/2021	1,016,400		Udex Feed		
A										
A										
A										
A										
A										
A										
A										
A										

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# 51-33624 Facility Name Phila Ref Girard Point

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 005A	Tank # 030A	Tank #	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☐	☐	☐	☐
3. Closure document kept on file by owner.	☒	☒	☐	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name Gary Bowman

Owner Signature	Title	Date
	President	11/01/2021

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P.	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Avenue				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
Gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
005A	Kristian Satterthwaite		5081	AFR	1557	Kristian Satterthwaite	10/29/21
030A	Kristian Satterthwaite		5081	AFR	1557	Kristian Satterthwaite	10/29/21

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

February 28, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401

Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PA DEP's) Storage Tank Registration/Permitting Application Forms for the removal of the following nine (9) Aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point Processing Area.

Removed					
Facility Name	**PADEP Facility ID #**	**PADEP Tank ID #**	**Owner Tank ID #**	**AMS Tank ID #**	**Removal Date**
Girard Point Refinery	51-33624	034A	GP-790	P-017	02/21/2022
Girard Point Refinery	51-33624	006A	GP-791	P-018	02/21/2022
Girard Point Refinery	51-33624	035A	GP-792	P-019	02/21/2022
Girard Point Refinery	51-33624	036A	GP-793	P-020	02/21/2022
Girard Point Refinery	51-33624	037A	GP-794	P-153	02/21/2022
Girard Point Refinery	51-33624	007A	GP-798	P-022	02/21/2022
Girard Point Refinery	51-33624	039A	GP-799	P-023	02/21/2022
Girard Point Refinery	51-33624	041A	GP-1091	NA	02/28/2022
Girard Point Refinery	51-33624	042A	GP-2982	NA	02/28/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.
Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.

Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

2630-PM-BECB0514 Rev. 6/2019
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
3144 West Passyunk Avenue				
Address Last Line – City	**State**	**ZIP+4**	**Country**	
Philadelphia	PA	19145	USA	
Client Contact Last Name	**First Name**	**MI**	**Suffix**	
Bowman	Gary	P	Sr.	
Client Contact Title		**Phone**	**Ext**	
President		610-636-4574		
E-mail Address			**FAX**	
gbowman@northstar.com				

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
034A	T	R	F	01/01/1962	02/21/2022	84,000		Benzene		
006A	T	R	F	01/01/1962	02/21/2022	84,000		Benzene		
035A	T	R	F	01/01/1962	02/21/2022	105,000		Cumene		
036A	T	R	F	01/01/1962	02/21/2022	105,000		Cumene		
037A	T	R	F	01/01/1962	02/21/2022	84,000		Solvent		
007A	T	R	F	01/01/1964	02/21/2022	84,000		Benzene		
039A	T	R	F	01/01/1964	02/21/2022	84,000		Benzene		
41A	T	R	M	01/01/1963	02/28/2022	14,000		Pour Depress (Infinium 500)		
42A	T	R	M		02/28/2022	7,000		Furnace Oil Stabilizer		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 034A	Tank # 006A	Tank # 035A	Tank # 036A	Tank # 037A	Tank # 007A
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☒	☒	☒
3. Closure document kept on file by owner.	☒	☒	☒	☒	☒	☒

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 039A	Tank # 41A	Tank # 42A	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☐	☐	☐
3. Closure document kept on file by owner.	☒	☒	☒	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	02-28-2022

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
034A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
006A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
035A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
036A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
037A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
007A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
039A	Brian Gerner	API 12C	5341	AFMX	1631		2/28/22
41A	Brian Gerner	UL 142	5341	AMR	1631		2/28/22
42A	Brian Gerner	UL 142	5341	AMR	1631		2/28/22

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar
Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

March 30, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401
Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tank Registration/Permitting Application Form for the removal of the following three (3) aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point site.

Removed					
Facility Name	**PADEP Facility ID #**	**PADEP Tank ID #**	**Owner Tank ID #**	**AMS Tank ID #**	**Removal Date**
Girard Point Refinery	51-33624	50A	GP-1038	P-157	03/09/2022
Girard Point Refinery	51-33624	049A	GP-1039	P-158	03/09/2022
Girard Point Refinery	51-33624	021A	GP-270	P-134	03/09/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.

Respectfully Submitted,

Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.
Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

2630-PM-BECB0514 Rev. 6/2019
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
51-33624 Facility ID #	Client ID#
	Site ID#
	Account #
	Auth ID#
Phila Ref Girard Point Facility Name	APS ID#
	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

* **For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)		
298341		☐ Volunteer Fire Co/EMS Org	☐ State Govt	☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr.	

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2		
3144 West Passyunk Avenue			
Address Last Line – City	**State**	**ZIP+4**	**Country**
Philadelphia	PA	19145	USA

Client Contact Last Name	First Name	MI	Suffix
Bowman	Gary	P	Sr.

Client Contact Title	Phone	Ext
President	610-636-4574	

E-mail Address	FAX
gbowman@northstar.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	**Latitude**			**Longitude**		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**

Horizontal Accuracy Measure Feet --or-- Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet --or-- Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name

Employer ID# (EIN) or SSN

Mailing Address Line 1

Mailing Address Line 2

Address Last Line - City **State** **ZIP+4**

Previous Facility ID#

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature **Title** **Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
50A	T	R	F	1972	03-09-2022	126,000	Alky Slurry			
049A	T	R	F	1989	03-09-2022	126,000	#6 Fuel Oil			
021A	T	R	F	1940	03-09-2022	3,078,012	Recovered Oil			

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	Tank # 50A	Tank # 049A	Tank # 021A	Tank #	Tank #	Tank #
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☐	☐	☐
3. Closure document kept on file by owner.	☒	☒	☒	☐	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	03-30-2022

Information & Invoices should be sent to:

- ☒ Tank Owner Contact
- ☒ Site Contact
- ☒ Facility Operator
- ☐ Other Responsible Party Identified Below

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	Mailing Address Line 2			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
50A	Brian Gerner	API 650	5341	AFMX	1631		3/30/22
049A	Brian Gerner	API 650	5341	AFMX	1631		3/30/22
021A	Brian Gerner	API 12C	5341	AFMX	1631		3/30/22

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

NorthStar Contracting Group, Inc.

2250 E Adams Ave • Philadelphia, PA 19124
Office: 215.533.8890 • Fax: 215.533.8897
Website • www.NorthStar.com

April 27, 2022

Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, Pennsylvania 19401
Via email: RA-serotanks@pa.gov, ra-tanks@pa.gov

Re: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)
PADEP Storage Tanks Registration/Permitting Application Form
PADEP Facility ID #51-33624 – Girard Point Refinery

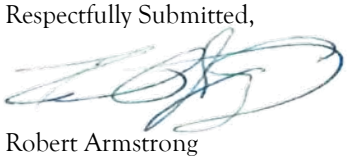
To whom it may concern:

Please find NorthStar Contracting Group, Inc.'s submittal of the Pennsylvania Department of Environmental Protection's (PADEP's) Storage Tank Registration/Permitting Application Form for the removal of the following four (4) aboveground storage tanks located at the Philadelphia Energy Solutions Refining and Marketing, LLC Girard Point site.

Removed					
Facility Name	**PADEP Facility ID #**	**PADEP Tank ID #**	**Owner Tank ID #**	**AMS Tank ID #**	**Removal Date**
Girard Point Refinery	51-33624	59A	GP-217	P-005	04/05/2022
Girard Point Refinery	51-33624	001A	GP-219	P-144	04/08/2022
Girard Point Refinery	51-33624	023A	GP-276	P-034	04/06/2022
Girard Point Refinery	51-33624	025A	GP-281	P-150	04/19/2022

If you have any questions, please do not hesitate to contact me at 440-228-1524.

Respectfully Submitted,



Robert Armstrong
Sr. Project Manager
NorthStar Contracting Group, Inc.
Enclosures: Storage Tank Registration/Permitting Application Form

cc:

Gary Bowman (NorthStar)
Dr. Kassahun Sellassie (AMS)
Thomas Barsley (AMS)
Charles Barksdale (Hilco)
Edward Wiener (AMS)
Mike Leonardo (Hilco)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

STORAGE TANKS REGISTRATION / PERMITTING APPLICATION FORM

Before completing this form, read the step-by-step instructions provided in this application package.

	DEP USE ONLY
	Client ID#
51-33624	Site ID#
Facility ID #	Account #
	Auth ID#
Phila Ref Girard Point	APS ID#
Facility Name	Master Auth ID#

I. PURPOSE OF SUBMITTAL

INITIAL (Applies to First-Time Facility Registration)

- ☐ Register Tanks(s) to be Used*
- ☐ Register Tank(s) to be Removed
- ☐ Register Tank(s) to be Temporarily Out of Use
- ☐ Register Tank(s) to be Closed in Place

AMENDED (Applies to Currently Registered Tank(s) or Existing Facility)

- ☐ Changed Owner Information
- ☐ Changed Facility Information
- ☐ Changed to Currently In Use Tank(s)*
- ☐ Changed to Temporarily Out of Use Tank(s)
- ☐ Changed Product
- ☐ Changed Contact Information
- ☐ Changed Facility Operator Information
- ☐ Added Tank(s) to Existing Facility*
- ☒ Changed to Permanently Closed Tank(s)/Removed
- ☐ Changed to Exempt Tank(s)

CHANGE OF OWNERSHIP

- ☐ Tanks Changed Ownership and Remain at Same Facility*

*** For Underground Storage Tanks (UST), attach the UST Operator Training Documentation Form (2630-PM-BECB0514a) and copies of the Class A and Class B operator training certificates.**

II. CURRENT OR NEW TANK OWNER / CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Fee Kind (check one if applicable)
298341		☐ Volunteer Fire Co/EMS Org ☐ State Govt ☐ Fed Govt

Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Dun & Bradstreet ID#
Philadelphia Energy Solutions Refining and Marketing, LLC		

Individual Last Name	First Name	MI	Suffix	SSN
Bowman	Gary	P	Sr.	

Additional Individual Last Name	First Name	MI	Suffix	SSN

Mailing Address Line 1	Mailing Address Line 2
3144 West Passyunk Avenue	

Address Last Line – City	State	ZIP+4	Country
Philadelphia	PA	19145	USA

Client Contact Last Name	First Name	MI	Suffix
Bowman	Gary	P	Sr.

Client Contact Title	Phone	Ext
President	610-636-4574	

E-mail Address	FAX
gbowman@northstar.com	

III. SITE INFORMATION

DEP Site ID# | Site Name

EPA ID# | Estimated Number of Employees to be Present at Site

Description of Site

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

County Name | Municipality | City ☐ | Boro ☐ | Twp ☐ | State

Site Location Line 1 | Site Location Line 2

Site Location Last Line – City | State | ZIP+4

Detailed Written Directions to Site

Site Contact Last Name | First Name | MI | Suffix

Site Contact Title | Site Contact Firm

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4

Phone | Ext | FAX | E-mail Address

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) | 6-Digit Code (Optional)

Site to Client Relationship

IIIa. PROPERTY OWNER INFORMATION

☐ Same as Tank Owner Identified in Section II. ☐ Different than Tank Owner Identified in Section II; identified below.

Organization Name or Registered Fictitious Name | Employer ID# (EIN) | Dun & Bradstreet ID#

Individual Last Name | First Name | MI | Suffix | SSN

Additional Individual Last Name | First Name | MI | Suffix | SSN

Mailing Address Line 1 | Mailing Address Line 2

Address Last Line – City | State | ZIP+4 | Country

Property Owner Contact Last Name | First Name | MI | Suffix

Property Owner Contact Title | Phone | Ext

E-mail Address | FAX

IV. FACILITY INFORMATION

DEP Storage Tank Facility ID# | **Facility Name** | **Facility Kind**

Facility Location Line 1 (if different than Site Location) | **Facility Location Line 2**

Facility Location Last Line - City | **State** | **ZIP+4**

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**

Horizontal Accuracy Measure Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☐ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code

Reference Point Code

Altitude Feet *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

Flammable & Combustible Liquid Permit # (if applicable)

State or Municipality that Issued the Permit

FACILITY OPERATOR INFORMATION

☐ **Same as Owner Identified in Section II.** ☐ **Different than Owner Identified in Section II; identified below.**

DEP Client ID# | **Client Type / Code**

Organization Name or Registered Fictitious Name | **Employer ID# (EIN)** | **Dun & Bradstreet ID#**

Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Additional Individual Last Name | **First Name** | **MI** | **Suffix** | **SSN**

Mailing Address Line 1 | **Mailing Address Line 2**

Address Last Line – City | **State** | **ZIP+4** | **Country**

Client Contact Last Name | **First Name** | **MI** | **Suffix**

Client Contact Title | **Phone** | **Ext**

E-mail Address | **FAX**

V. CHANGE OF OWNERSHIP INFORMATION

☐ **All Tanks Changed Ownership at the Facility**

☐ **Some Tanks Changed Ownership at the Facility** (List all applicable tank numbers in Section VI.)

OWNERSHIP CHANGE TO - Client information is noted in Section II.

OWNERSHIP CHANGE FROM (previous owner information)

Name			
Employer ID# (EIN) or SSN			
Mailing Address Line 1			
Mailing Address Line 2			
Address Last Line - City		**State**	**ZIP+4**
Previous Facility ID#			

DATE OF SALE/TRANSFER	

SIGNATURE & CERTIFICATION OF PREVIOUS OWNER

Previous owner's signature is not available. As required, the "new" owner has attached a deed of transfer or other proof of ownership to this application. ☐ **Yes** ☐ **No** ☐ **N/A**

I have reviewed this form for submission to the Department. I certify under penalty of law as provided in 18 PA. C.S.A. §4903 (relating to false swearing) and 18 PA. C.S.A. §4904 (relating to unsworn falsification to authorities), that I have the authority to sign this Section for the transfer of permit or registration for the storage tanks listed herein. Further, I certify that all information provided in Section V is true, accurate and complete to the best of my knowledge and belief.

Type or Print Previous Owner Name

Previous Owner Signature	**Title**	**Date**

Facility ID# Facility Name

VI. STORAGE DESCRIPTION

Type or print legibly each regulated storage tank at this facility under your ownership.
Status Codes: C-Currently in Use T-Temporarily Out of Use E-Exempt R-Removed P-Closed In Place
Type Codes: M-Manufactured F-Field Constructed

A. ABOVEGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code
59A	T	R	F	1955	04/05/2022	1359162		Benzene		
001A	C	R	F	1925	04/08/2022	1665720		Light Cycle Oil		
023A	T	R	F	1945	04/06/2022	3045000		Light Naptha		
025A	T	R	F	1947	04/19/2022	3385200		Vacuum Gas Oil		

B. UNDERGROUND TANKS. List all new tanks. If amending information, list only those tanks being amended. Copy this page if more lines are needed.

Tank#	Prev Status	New Status	Type	Install Date (Mo/Day/Yr)	Change of Status Date (Mo/Day/Yr)	Capacity (Gallons)	Substance Code (Currently or Last Stored)	CERCLA Name (If Hazardous Substance) Substance Name (If Other Petroleum Substance or Petroleum Based Mixture)	CAS# (If Hazardous Substance)	Exempt Reference Code

Facility ID# Facility Name

VII. ABOVEGROUND & UNDERGROUND NEW TANK INSTALLATION INFORMATION

The DEP Certified Installer should complete this section. New tanks listed in Section VI must also be listed in this Section. Write the Tank Number(s) and place an ☒ in the appropriate box for each component that was installed.

Tank Construction & Corrosion Protection (1)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Tank Manufacturer:						
Model:						
A. Unprotected Steel (Single Wall)	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Steel (Galvanic)	☐	☐	☐	☐	☐	☐
C. Cathodically Protected Steel (Impressed Current)	☐	☐	☐	☐	☐	☐
D. Unprotected Steel (Double Wall)	☐	☐	☐	☐	☐	☐
E. Fiberglass (Single Wall)	☐	☐	☐	☐	☐	☐
F. Fiberglass (Double Wall)	☐	☐	☐	☐	☐	☐
G. Steel w/Plastic or Fiberglass Jacket or Double Wall Act 100	☐	☐	☐	☐	☐	☐
H. Steel With FRP Coating (Act 100 or Equivalent)	☐	☐	☐	☐	☐	☐
I. Steel with Lined Interior	☐	☐	☐	☐	☐	☐
J. Concrete	☐	☐	☐	☐	☐	☐
O. Cathodically Protected Double Wall Steel (Galvanic)	☐	☐	☐	☐	☐	☐
P. Cathodically Protected Steel with Liner	☐	☐	☐	☐	☐	☐
Q. Double Bottom (ASTs Only)	☐	☐	☐	☐	☐	☐
R. Molded Plastic Form (ASTs Only)	☐	☐	☐	☐	☐	☐
S. Stainless Steel	☐	☐	☐	☐	☐	☐
T. Aluminum	☐	☐	☐	☐	☐	☐
U. Fire Protected Double Wall AST	☐	☐	☐	☐	☐	☐
V. Steel with Plastic or Fiberglass Jacket or Double Wall Act 100 with Anodes	☐	☐	☐	☐	☐	☐
W. Steel with FRP Coating (Act 100 or Equivalent) with Anodes	☐	☐	☐	☐	☐	☐
X. Molded Plastic Form (Double Wall) (AST's Only)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Underground Piping Construction & Corrosion Protection – Single/Inner Wall (28)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Primary (Inner) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Underground Piping Construction & Corrosion Protection – Outer Wall (29)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
Secondary (Outer) Piping Manufacturer:						
Model:						
A. Bare Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
D. Fiberglass	☐	☐	☐	☐	☐	☐
E. Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
G. No Dispensing Piping	☐	☐	☐	☐	☐	☐
L. Poly-encased Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Aboveground Piping Construction & Corrosion Protection (3)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Carbon Steel	☐	☐	☐	☐	☐	☐
B. Cathodically Protected Metallic	☐	☐	☐	☐	☐	☐
C. Copper	☐	☐	☐	☐	☐	☐
D. Single Wall Fiberglass	☐	☐	☐	☐	☐	☐
E. Single Wall Flexible (Non-Metallic)	☐	☐	☐	☐	☐	☐
F. PVC	☐	☐	☐	☐	☐	☐
G. None	☐	☐	☐	☐	☐	☐
I. Double Wall - Metallic Primary	☐	☐	☐	☐	☐	☐
J. Double Wall - Rigid (FRP) Primary	☐	☐	☐	☐	☐	☐
K. Double Wall - Flexible Primary	☐	☐	☐	☐	☐	☐
L. Stainless Steel	☐	☐	☐	☐	☐	☐
99. Other: _____	☐	☐	☐	☐	☐	☐

Product Delivery System (4)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Suction: Check valve at pump	☐	☐	☐	☐	☐	☐
B. Suction: Check valve at tank	☐	☐	☐	☐	☐	☐
C. Pressure	☐	☐	☐	☐	☐	☐
D. Gravity fed	☐	☐	☐	☐	☐	☐
E. None	☐	☐	☐	☐	☐	☐

Spill Prevention (6)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
S. Permanently installed and liquid tight (single-walled)	☐	☐	☐	☐	☐	☐
D. Permanently installed and liquid tight (double-walled)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Overfill Prevention (7)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Overfill alarm	☐	☐	☐	☐	☐	☐
E. Fill in less than 25 gallons (exempt)	☐	☐	☐	☐	☐	☐
N. None (AST only)	☐	☐	☐	☐	☐	☐
S. Drop tube shutoff device	☐	☐	☐	☐	☐	☐
Y. Yes (AST only) Type: _____	☐	☐	☐	☐	☐	☐

Emergency Containment (16) ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes (includes double-walled tanks with required appurtenances)	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Secondary Containment (17) Single Wall ASTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No - Explain: _____	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐
V. Underground vault	☐	☐	☐	☐	☐	☐

Stage I Vapor Recovery (19) USTs and ASTs when applicable	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
A. Coaxial	☐	☐	☐	☐	☐	☐
B. 2 Point	☐	☐	☐	☐	☐	☐
N. None or incomplete	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

Tank-top Containment Sumps Present (Product Piping Only) (21) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some penetrations and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. At all penetrations and liquid tight	☐	☐	☐	☐	☐	☐

Under-dispenser Containment Present (22) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. None – Explain: _____	☐	☐	☐	☐	☐	☐
S. At some dispensers and liquid tight – Explain: _____	☐	☐	☐	☐	☐	☐
A. Under all dispensers and liquid tight	☐	☐	☐	☐	☐	☐

Line Leak Detector Shuts Off Pump (23) USTs only	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Tank Supplies Emergency Generator (25)	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
N. No	☐	☐	☐	☐	☐	☐
Y. Yes	☐	☐	☐	☐	☐	☐

Facility ID# Facility Name

VIII. ABOVEGROUND & UNDERGROUND TANK INFORMATION FOR PERMANENT CLOSURE

Write the Tank Number(s) and place an ☒ in the appropriate box for each tank that was removed or closed in place.

Items 2 & 3 below apply to large ASTs and all USTs	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**	**Tank #**
	59A	**001A**	**023A**	**025A**		
1. Contamination suspected or observed and notification of contamination form was submitted to the appropriate DEP regional office.	☐	☐	☐	☐	☐	☐
2. Closure document submitted to the appropriate DEP regional office.	☒	☒	☒	☒	☐	☐
3. Closure document kept on file by owner.	☒	☒	☒	☒	☐	☐

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. This registration is conditioned upon compliance with provisions of the Storage Tank and Spill Prevention Act of 1989, all applicable regulations, and with the requirements for obtaining and maintaining a permit required under this Act. I certify my responsibility for assuring the following permit requirements:

- Storage tank systems are in compliance with applicable administrative, technical and operational requirements as specified in Subchapter E for underground tanks or Subchapter F or G for aboveground tanks.
- Tank handling and inspection activities are performed by an individual possessing DEP certification in the appropriate category as required in Subchapters A and B.
- Underground storage tanks meet the applicable financial responsibility requirements of Subchapter H (relating to financial responsibility requirements).
- A Spill Prevention Response (SPR) Plan must be submitted to the appropriate DEP regional office for facilities that have aboveground storage tanks where the total capacity of all aboveground tanks is greater than 21,000 gallons.
- Other state and local permits required for operation of the tank system have been attained.

My signature represents to the Department that I own the storage tank(s) and am aware of the responsibilities and potential liabilities as an "owner" arising under the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I am also advised that statements made on this registration is made subject to the penalties of 18 PA. C.S.A. Section 4904 relating to unsworn falsification to authorities.

Type or Print Owner Name : Gary Bowman

Owner Signature	Title	Date
	President	04/27/2022

Information & Invoices should be sent to:

- ☒ **Tank Owner Contact**
- ☒ **Site Contact**
- ☒ **Facility Operator**
- ☐ **Other Responsible Party Identified Below**

Organization Name or Registered Fictitious Name		Employer ID# (EIN)		Dun & Bradstreet ID#
NorthStar Contracting Group, Inc.				
Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Bowman	Gary	P	Sr.	
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1	**Mailing Address Line 2**			
2250 East Adams Ave.				
Address Last Line – City		**State**	**ZIP+4**	**Country**
Philadelphia		PA	19124	USA
Contact Title			**Phone**	**Ext.**
President			610-636-4574	
E-mail Address				
gbowman@northstar.com				
Client to Site (Facility) Relationship				

X. INSTALLER / REMOVER CERTIFICATION

This section must be completed by the certified tank handler(s) who is responsible for the installation or removal from service of the aboveground and underground storage tank systems listed in Section VI. Tank modification activity must be submitted on a "Tank Modification Report" form.

SIGNATURE & CERTIFICATION OF INSTALLER(S) / REMOVER(S)

As the certified tank handler responsible for the tank handling activities in the category or categories listed, I certify that all tank handling activities were conducted in compliance with the design, installation and operation standards of the Storage Tank and Spill Prevention Act of 1989 and all applicable regulations. I also certify, under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided therein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Installer/Remover Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Installer/Remover Signature	Date
59A	Brian Gerner	API 12C	5341	AFMX	1631		4/27/2022
001A	Brian Gerner	API 12C	5341	AFMX	1631		4/27/2022
023A	Brian Gerner	API 12C	5341	AFMX	1631		4/27/2022
025A	Brian Gerner	API 12C	5341	AFMX	1631		4/27/2022

XI. INSPECTOR CERTIFICATION

This section must be completed by the DEP Certified Tank Inspector(s) who is responsible for verifying the installation standards for field constructed tanks and aboveground tanks greater than 21,000 gallons listed in Section VI. (Type or Print legibly) A DEP Certified Inspector may also be responsible for inspecting existing ASTs which are entering regulated service for the first time with no tank handling activities.

SIGNATURE & CERTIFICATION OF INSPECTOR(S)

As the certified tank inspector responsible for verifying tank handling activities and construction standards, I certify that the tank(s) listed below are constructed to appropriate industry standards and, if applicable, to manufacturer's specifications; that the tank(s) have been tested as required by industry standards; and that the tank(s) meet or exceed applicable design and operating standards; and are in compliance with the requirements of the Storage Tank and Spill Prevention Act of 1989, and all applicable regulations. I also certify under penalty of law as provided in 18 PA C.S.A. 4904 (relating to unsworn falsification to authorities), that the information provided herein is true, accurate and complete to the best of my knowledge and belief.

Tank#	Inspector Name	Construction Standard	Individual Certification#	Certification Category	Company Certification#	Inspector Signature	Date

XII. SITE SPECIFIC INSTALLATION PERMIT NUMBER

If a site-specific permit was required for a new tank installation, write the tank number(s) and permit number(s) in the appropriate box.

Site-Specific Installation Permit	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#	Tank#

Appendix H

Site Assessment and Site Characterization Soil and Groundwater Analytical Results

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1038-01	GPR1038-02	GPR1038-03	GPR1038-04R	GPR1038-04	GPR1038-04R	GPR1038-05	GPR1038-06	GPR1038-06
Field Sample ID			GPR1038-01-SS01	GPR1038-02-SS01	GPR1038-03-SS01	TG06-MW05-0.5-1.0	GPR1038-04-SS01	TG06-MW05-2.0-2.5	GPR1038-05-SS01	GPR1038-06-0.5-1.0	GPR1038-06-2.5-3.0
Collection Depth (ft bgs)			1.5 - 2.0	2.5 - 3.0	2.5 - 3.0	0.5 - 1.0	1.5 - 2.0	2.0 - 2.5	3.0 - 3.5	0.5 - 1.0	2.5 - 3.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			6/16/2023	6/16/2023	6/16/2023	12/4/2023	6/15/2023	12/4/2023	6/16/2023	12/4/2023	12/4/2023
Comments											
Physical Properties											
pH	--	--	8.62	7.18	8.13	8.24	7.73	8.01	7.28	9.92	8.63
Volatile Organic Compounds											
Benzene	280	0.5	0.0084 (0.00066)	ND (0.00063)	ND (0.0006)	0.035 J (0.037)	0.04 J (0.041)	0.0014 (0.00062)	0.14 (0.047)	ND (0.00049)	0.00055 J (0.00061)
Cumene	10000	2500	0.026 (0.0013)	0.026 (0.0012)	0.00034 J (0.0012)	0.93 (0.074)	1.4 (0.082)	0.074 (0.0012)	1.7 (0.094)	ND (0.00098)	0.0085 (0.0012)
1,2-Dibromoethane	3.7	0.005	ND (0.00066)	ND (0.00063)	ND (0.0006)	ND (0.037)	ND (0.041)	ND (0.00062)	ND (0.047)	ND (0.00049)	ND (0.00061)
1,2-Dichloroethane	85	0.5	ND (0.0013)	ND (0.0012)	ND (0.0012)	ND (0.074)	ND (0.082)	ND (0.0012)	ND (0.094)	ND (0.00098)	ND (0.0012)
Ethyl Benzene	880	70	0.01 (0.0013)	ND (0.0012)	ND (0.0012)	0.46 (0.074)	1 (0.082)	0.005 (0.0012)	0.091 J (0.094)	ND (0.00098)	0.0011 J (0.0012)
Methyl tert-butyl ether	8500	2	ND (0.0027)	ND (0.0025)	ND (0.0024)	ND (0.15)	ND (0.16)	ND (0.0025)	ND (0.19)	ND (0.002)	ND (0.0024)
Toluene	10000	100	0.022 (0.0013)	ND (0.0012)	ND (0.0012)	0.26 (0.074)	0.44 (0.082)	0.0031 (0.0012)	0.23 (0.094)	ND (0.00098)	0.002 (0.0012)
1,2,4-Trimethylbenzene	4700	300	0.078 (0.0027)	0.0016 J (0.0025)	0.00059 J (0.0024)	30 (2.9)	24 (0.16)	0.078 (0.0025)	0.11 J (0.19)	ND (0.002)	0.0046 (0.0024)
1,3,5-Trimethylbenzene	4700	93	0.016 (0.0027)	0.00072 J (0.0025)	0.00025 J (0.0024)	17 (0.15)	17 (0.16)	0.035 (0.0025)	ND (0.19)	ND (0.002)	0.0011 J (0.0024)
Xylenes (total)	7900	1000	0.16 (0.0013)	0.0025 J (0.0012)	ND (0.0012)	13 (0.074)	20 (0.082)	0.082 (0.0012)	0.37 J (0.094)	ND (0.00098)	0.02 (0.0012)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.24 (0.14)	0.52 J (0.61)	0.055 J (0.13)	2 (1.2)	4.1 J (5.9)	0.56 (0.13)	0.44 J (0.66)	0.36 (0.11)	1.1 (0.12)
Benzo(a)anthracene	130	340	0.96 (0.14)	0.73 (0.61)	0.29 (0.13)	0.96 J (1.2)	1.3 J (5.9)	0.85 (0.13)	ND (0.66)	1.6 (0.11)	2.1 (0.12)
Benzo(a)pyrene	91	46	1 (0.18)	0.72 J (0.81)	0.25 (0.18)	0.81 J (1.7)	ND (7.8)	0.9 (0.17)	0.59 J (0.88)	1.2 (0.14)	1.4 (0.16)
Benzo(b)fluoranthene	76	170	1 (0.14)	0.68 (0.61)	0.29 (0.13)	1 J (1.2)	ND (5.9)	1 (0.13)	0.44 J (0.66)	1.1 (0.11)	1.3 (0.12)
Benzo(g,h,i)perylene	190000	180	0.5 (0.18)	0.54 J (0.81)	0.12 J (0.18)	0.5 J (1.7)	ND (7.8)	0.79 (0.17)	0.5 J (0.88)	0.78 (0.14)	0.97 (0.16)
Chrysene	760	230	0.98 (0.14)	0.9 (0.61)	0.28 (0.13)	1.1 J (1.2)	1.7 J (5.9)	1.2 (0.13)	ND (0.66)	2.3 (0.11)	3.1 (0.12)
Fluorene	130000	3800	0.18 J (0.23)	0.88 J (1)	0.029 J (0.22)	3 (2.1)	11 (9.8)	0.49 (0.22)	ND (1.1)	0.35 (0.18)	1.1 (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.55 (0.045)	0.55 (0.2)	0.042 J (0.044)	30 (0.42)	150 (2)	3 (0.044)	0.83 (0.22)	0.46 (0.035)	4.1 (0.04)
Phenanthrene	190000	10000	0.62 (0.14)	1.4 (0.61)	0.18 (0.13)	8.8 (1.2)	24 (5.9)	1.4 (0.13)	1.6 (0.66)	2 (0.11)	4.4 (0.12)
Pyrene	96000	2200	1.2 (0.14)	1.1 (0.61)	0.35 (0.13)	2.1 (1.2)	4.9 J (5.9)	1.5 (0.13)	1.9 (0.66)	2.2 (0.11)	3.2 (0.12)
Metals											
Lead	1000	450	255 (2.61)	686 (2.41)	232 (2.61)	506 (2.48)	427 (2.33)	441 (2.56)	256 (2.54)	83.1 (2.08)	803 (2.34)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1038-06	GPR1038-07	GPR1038-07	GPR1038-07	GPR1038-08	GPR1038-09	GPR1038-10	GPR1038-11	GPR1038-12
Field Sample ID			GPR1038-06-4.5-5.0	GPR1038-07-0.5-1.0	GPR1038-07-1.5-2.0	GPR1038-07-4.5-5.0	GPR1038-08-2.5-3.0	GPR1038-09-2.5-3.0	GPR1038-10-4.5-5.0	GPR1038-11-4.5-5.0	GPR1038-12-2.5-3.0
Collection Depth (ft bgs)			4.5 - 5.0	0.5 - 1.0	1.5 - 2.0	4.5 - 5.0	2.5 - 3.0	2.5 - 3.0	4.5 - 5.0	4.5 - 5.0	2.5 - 3.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/4/2023	12/4/2023	12/4/2023	12/4/2023	4/18/2024	4/18/2024	4/18/2024	4/18/2024	4/18/2024
Comments											
Physical Properties											
pH	--	--	9.35	8.28	8.15	7.64	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.00033 J (0.00057)	ND (0.0005)	0.028 (0.028)	ND (0.00057)	NA	NA	NA	NA	NA
Cumene	10000	2500	0.00026 J (0.0011)	ND (0.001)	0.15 (0.055)	0.00057 J (0.0011)	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00057)	ND (0.0005)	ND (0.028)	ND (0.00057)	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.0011)	ND (0.001)	ND (0.055)	ND (0.0011)	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.0011)	ND (0.001)	0.012 J (0.055)	ND (0.0011)	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.0023)	ND (0.002)	ND (0.11)	ND (0.0023)	NA	NA	NA	NA	NA
Toluene	10000	100	ND (0.0011)	ND (0.001)	ND (0.055)	ND (0.0011)	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	0.0018 J (0.0023)	ND (0.002)	0.038 J (0.11)	0.00067 J (0.0023)	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.00098 J (0.0023)	ND (0.002)	ND (0.11)	0.00029 J (0.0023)	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	0.0037 J (0.0011)	ND (0.001)	0.035 J (0.055)	0.0011 (0.0011)	NA	NA	NA	NA	NA
Semivolatile Organic Compounds											
Anthracene	190000	350	1.2 (0.12)	2.8 (0.11)	0.41 (0.11)	1.4 (0.13)	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	1.5 (0.12)	4.5 (0.11)	1.2 (0.11)	1.9 (0.13)	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	1.5 (0.16)	3 (0.14)	1.2 (0.15)	1.4 (0.17)	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	1.9 (0.12)	3.7 (0.11)	1.5 (0.11)	1.8 (0.13)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	1 (0.16)	1.2 (0.14)	0.68 (0.15)	0.96 (0.17)	NA	NA	NA	NA	NA
Chrysene	760	230	2.1 (0.12)	3.7 (0.11)	1 (0.11)	2.1 (0.13)	NA	NA	NA	NA	NA
Fluorene	130000	3800	0.78 (0.19)	0.84 (0.18)	0.44 (0.18)	1 (0.22)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	1.8 (0.039)	0.11 (0.036)	0.36 (0.037)	4.4 (0.043)	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	3.4 (0.12)	9.4 (0.53)	0.79 (0.11)	3 (0.13)	NA	NA	NA	NA	NA
Pyrene	96000	2200	2.7 (0.12)	10 (0.53)	1.9 (0.11)	2.8 (0.13)	NA	NA	NA	NA	NA
Metals											
Lead	1000	450	431 (2.31)	133 (2.12)	232 (2.14)	609 (2.48)	326 (8.65)	552 (4.84)	368 (5.22)	276 (4.78)	554 (5.1)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1039-01	GPR1039-02	GPR1039-03	GPR1039-04	GPR1039-05	GPR1047-01	GPR1047-02	GPR1047-03	GPR1047-03
Field Sample ID			GPR1039-01-SS01	GPR1039-02-SS01	GPR1039-03-SS01	GPR1039-04-SS01	GPR1039-05-SS01	GPR1047-01-SS01	GPR1047-02-SS01	GPR1047-03-SS01	DUP-54
Collection Depth (ft bgs)			3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	2.0 - 2.5	2.5 - 3.0	4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.0 - 4.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			6/16/2023	6/16/2023	6/16/2023	6/16/2023	6/16/2023	12/8/2022	12/8/2022	12/8/2022	12/8/2022
Comments											Field Duplicate
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	8.7	7.5	8.7	10.7
Volatile Organic Compounds											
Benzene	280	0.5	0.0018 (0.00067)	0.00088 J (0.00094)	ND (0.00058)	ND (0.00063)	ND (0.00079)	NA	NA	NA	NA
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds											
Anthracene	190000	350	0.46 J (1.3)	0.42 J (0.71)	0.15 (0.13)	1.7 (1.3)	1.2 (0.75)	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.37 J (1.3)	ND (0.71)	0.34 (0.13)	ND (1.3)	0.54 J (0.75)	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (1.8)	0.64 J (0.95)	0.33 (0.18)	ND (1.7)	0.4 J (1)	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	ND (1.3)	0.68 J (0.71)	0.36 (0.13)	ND (1.3)	0.42 J (0.75)	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.26 J (1.8)	0.56 J (0.95)	0.25 (0.18)	ND (1.7)	0.27 J (1)	NA	NA	NA	NA
Chrysene	760	230	0.92 J (1.3)	ND (0.71)	0.48 (0.13)	ND (1.3)	0.73 J (0.75)	NA	NA	NA	NA
Fluorene	130000	3800	0.67 J (2.2)	0.38 J (1.2)	0.17 J (0.22)	1.6 J (2.2)	1.3 (1.2)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.36 J (0.44)	2 (0.24)	0.26 (0.044)	0.91 (0.43)	0.97 (0.25)	NA	NA	NA	NA
Phenanthrene	190000	10000	2.1 (1.3)	1.5 (0.71)	0.58 (0.13)	5.4 (1.3)	2.6 (0.75)	NA	NA	NA	NA
Pyrene	96000	2200	1.2 J (1.3)	1.5 (0.71)	0.86 (0.13)	2.6 (1.3)	2.5 (0.75)	NA	NA	NA	NA
Metals											
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1047-04	GPR1047-06	GPR1047-07	GPR1101-01	GPR1101-02	GPR1101-03	GPR1101-04	GPR1101-05	GPR1101-06
Field Sample ID			GPR1047-04-SS01	GPR1047-06-SS01	GPR1047-07-SS01	GPR1101-01-SS01	GPR1101-02-SS01	GPR1101-03-SS01	GPR1101-04-SS01	GPR1101-05-SS01	GPR1101-06-0.5-1.0
Collection Depth (ft bgs)			4.5 - 5.0	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	3.0 - 3.5	4.0 - 4.5	4.5 - 5.0	4.0 - 4.5	0.5 - 1.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/8/2022	12/8/2022	12/8/2022	12/9/2022	12/9/2022	12/9/2022	12/9/2022	12/9/2022	12/4/2023
Comments											
Physical Properties											
pH	--	--	8.8	9	10.7	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	NA	NA	NA	0.1 (0.047)	0.08 (0.037)	0.022 J (0.05)	0.23 (0.078)	ND (0.0006)	ND (0.00048)
Cumene	10000	2500	NA	NA	NA	3.9 (0.093)	0.39 (0.074)	1.1 (0.1)	1.9 (0.16)	0.0065 (0.0012)	ND (0.00095)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	ND (0.047)	ND (0.037)	ND (0.05)	ND (0.078)	ND (0.0006)	ND (0.00048)
1,2-Dichloroethane	85	0.5	NA	NA	NA	ND (0.093)	ND (0.074)	ND (0.1)	ND (0.16)	ND (0.0012)	ND (0.00095)
Ethyl Benzene	880	70	NA	NA	NA	0.055 J (0.093)	0.16 (0.074)	0.047 J (0.1)	0.3 (0.16)	ND (0.0012)	ND (0.00095)
Methyl tert-butyl ether	8500	2	NA	NA	NA	ND (0.19)	ND (0.15)	ND (0.2)	ND (0.31)	ND (0.0024)	ND (0.0019)
Toluene	10000	100	NA	NA	NA	0.27 (0.093)	0.2 (0.074)	0.3 (0.1)	0.29 (0.16)	ND (0.0012)	ND (0.00095)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	0.4 (0.19)	0.3 (0.15)	0.7 (0.2)	51 (1.6)	0.002 J (0.0024)	ND (0.0019)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	0.028 J (0.19)	0.064 J (0.15)	0.13 J (0.2)	21 (0.31)	ND (0.0024)	ND (0.0019)
Xylenes (total)	7900	1000	NA	NA	NA	0.44 J (0.093)	0.76 (0.074)	0.14 J (0.1)	2.7 (0.16)	0.0022 J (0.0012)	ND (0.00095)
Semivolatile Organic Compounds											
Anthracene	190000	350	NA	NA	NA	1.4 (0.14)	0.21 (0.12)	0.22 (0.13)	6.9 (0.61)	0.24 (0.12)	0.2 (0.11)
Benzo(a)anthracene	130	340	NA	NA	NA	0.5 (0.14)	0.066 J (0.12)	0.16 (0.13)	1.3 (0.61)	0.15 (0.12)	0.27 (0.11)
Benzo(a)pyrene	91	46	NA	NA	NA	0.3 (0.19)	0.11 J (0.16)	0.14 J (0.18)	0.6 J (0.81)	0.2 (0.16)	0.35 (0.15)
Benzo(b)fluoranthene	76	170	NA	NA	NA	0.38 (0.14)	0.11 J (0.12)	0.17 (0.13)	0.67 (0.61)	0.18 (0.12)	0.41 (0.11)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	0.25 (0.19)	0.18 (0.16)	0.13 J (0.18)	0.5 J (0.81)	0.32 (0.16)	0.28 (0.15)
Chrysene	760	230	NA	NA	NA	0.57 (0.14)	0.2 (0.12)	0.18 (0.13)	2.7 (0.61)	0.34 (0.12)	0.29 (0.11)
Fluorene	130000	3800	NA	NA	NA	3.2 (0.24)	0.12 J (0.2)	0.53 (0.22)	17 (1)	0.081 J (0.2)	0.19 (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	0.23 (0.19)	0.086 J (0.16)	0.12 J (0.18)	0.26 J (0.81)	0.13 J (0.16)	0.22 (0.15)
Naphthalene	66	25	NA	NA	NA	2.5 (0.24)	0.22 (0.2)	0.37 (0.22)	ND (1)	0.098 J (0.2)	0.67 (0.038)
Phenanthrene	190000	10000	NA	NA	NA	12 (0.28)	0.33 (0.12)	1.2 (0.13)	40 (3)	0.3 (0.12)	0.5 (0.11)
Pyrene	96000	2200	NA	NA	NA	1.4 (0.14)	0.48 (0.12)	0.32 (0.13)	8.3 (0.61)	0.8 (0.12)	0.42 (0.11)
Metals											
Lead	1000	450	NA	NA	NA	379 (2.77)	380 (2.44)	396 (2.56)	99.4 (2.42)	169 (2.32)	86.4 (2.22)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1101-06	GPR1101-07	GPR1101-07	GPR1101-08	GPR1101-08	GPR1101-09	GPR1101-10	GPR270-01	GPR270-03
Field Sample ID			GPR1101-06-3.5-4.0	GPR1101-07-0.5-1.0	GPR1101-07-2.5-3.0	GPR1101-08-0.5-1.0	GPR1101-08-4.5-5.0	GPR-1101-09-3.5-4	GPR-1101-10-3.5-4	GPR270-01-SS01	GPR270-03-SS01
Collection Depth (ft bgs)			3.5 - 4.0	0.5 - 1.0	2.5 - 3.0	0.5 - 1.0	4.5 - 5.0	3.5 - 4.0	3.5 - 4.0	4.5 - 5.0	3.5 - 4.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/4/2023	12/5/2023	12/5/2023	12/5/2023	12/5/2023	7/19/2024	7/19/2024	12/8/2022	12/8/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00059)	ND (0.0008)	0.0066 (0.00076)	ND (0.00062)	ND (0.0006)	NA	NA	0.036 J (0.054)	0.061 (0.057)
Cumene	10000	2500	0.012 (0.0012)	ND (0.0016)	0.26 (0.0015)	ND (0.0012)	ND (0.0012)	NA	NA	0.048 J (0.11)	0.21 (0.11)
1,2-Dibromoethane	3.7	0.005	ND (0.00059)	ND (0.0008)	ND (0.00076)	ND (0.00062)	ND (0.0006)	NA	NA	ND (0.054)	ND (0.057)
1,2-Dichloroethane	85	0.5	ND (0.0012)	ND (0.0016)	ND (0.0015)	ND (0.0012)	ND (0.0012)	NA	NA	ND (0.11)	ND (0.11)
Ethyl Benzene	880	70	0.00055 J (0.0012)	ND (0.0016)	0.0043 (0.0015)	ND (0.0012)	ND (0.0012)	NA	NA	0.051 J (0.11)	0.075 J (0.11)
Methyl tert-butyl ether	8500	2	ND (0.0024)	ND (0.0032)	ND (0.003)	ND (0.0025)	ND (0.0024)	NA	NA	ND (0.22)	ND (0.23)
Toluene	10000	100	0.00072 J (0.0012)	ND (0.0016)	0.0039 (0.0015)	ND (0.0012)	ND (0.0012)	NA	NA	0.8 (0.11)	0.96 (0.11)
1,2,4-Trimethylbenzene	4700	300	0.0054 (0.0024)	ND (0.0032)	0.013 (0.003)	ND (0.0025)	ND (0.0024)	NA	NA	0.087 J (0.22)	0.12 J (0.23)
1,3,5-Trimethylbenzene	4700	93	0.0017 J (0.0024)	ND (0.0032)	0.0034 (0.003)	ND (0.0025)	ND (0.0024)	NA	NA	ND (0.22)	0.034 J (0.23)
Xylenes (total)	7900	1000	0.0092 (0.0012)	ND (0.0016)	0.029 (0.0015)	ND (0.0012)	ND (0.0012)	NA	NA	0.18 J (0.11)	0.25 J (0.11)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.8 (0.13)	ND (0.12)	4.1 (0.76)	0.075 J (0.14)	0.17 (0.14)	NA	NA	2.7 (0.15)	5.3 (0.15)
Benzo(a)anthracene	130	340	1.3 (0.13)	0.097 J (0.12)	1.4 (0.76)	0.22 (0.14)	0.65 (0.14)	NA	NA	3.2 (0.15)	4.8 (0.15)
Benzo(a)pyrene	91	46	1.4 (0.17)	0.12 J (0.16)	1.2 (1)	0.23 (0.19)	0.64 (0.19)	NA	NA	3.1 (0.2)	2.9 (0.2)
Benzo(b)fluoranthene	76	170	1.6 (0.13)	0.2 (0.12)	1.2 (0.76)	0.33 (0.14)	0.66 (0.14)	NA	NA	3.7 (0.15)	3.3 (0.15)
Benzo(g,h,i)perylene	190000	180	0.91 (0.17)	0.089 J (0.16)	1.4 (1)	0.18 J (0.19)	0.34 (0.19)	NA	NA	2.2 (0.2)	1.4 (0.2)
Chrysene	760	230	1.5 (0.13)	0.14 (0.12)	1.8 (0.76)	0.25 (0.14)	0.56 (0.14)	NA	NA	3.6 (0.15)	5.4 (0.15)
Fluorene	130000	3800	0.43 (0.21)	ND (0.2)	7.7 (1.3)	0.028 J (0.24)	0.094 J (0.24)	NA	NA	2.1 (0.25)	6 (0.25)
Indeno(1,2,3-cd)pyrene	76	18000	0.97 (0.17)	0.077 J (0.16)	1.1 (1)	0.14 J (0.19)	0.32 (0.19)	NA	NA	NA	NA
Naphthalene	66	25	3.7 (0.042)	0.095 (0.04)	23 (0.25)	0.35 (0.047)	0.53 (0.047)	NA	NA	15 (1.3)	10 (1.2)
Phenanthrene	190000	10000	1.7 (0.13)	0.14 (0.12)	20 (0.76)	0.3 (0.14)	0.27 (0.14)	NA	NA	5.8 (0.15)	23 (0.75)
Pyrene	96000	2200	1.9 (0.13)	0.2 (0.12)	3 (0.76)	0.4 (0.14)	0.69 (0.14)	NA	NA	6.1 (0.15)	13 (0.75)
Metals											
Lead	1000	450	692 (2.51)	37.3 (2.36)	401 (3)	101 (2.76)	36 (2.78)	142 (8.55)	371 (6.46)	341 (3.01)	450 (3.05)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR270-07	GPR270-08	GPR270-09	GPR270-11R	GPR270-11	GPR270-11R	GPR270-11R	GPR270-13	GPR270-14
Field Sample ID			GPR270-07-SS01	GPR270-08-SS01	GPR270-09-SS01	TG06-MW01R-1.5-2.0	GPR270-11-SS01	TG06-MW01R-6.5-7.0	TG06-MW01R-7.0-7.5	GPR270-13-SS01	GPR270-14-0.5-1.0
Collection Depth (ft bgs)			4.0 - 4.5	4.5 - 5.0	3.5 - 4.0	1.5 - 2.0	4.5 - 5.0	6.5 - 7.0	7.0 - 7.5	4.5 - 5.0	0.5 - 1.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/8/2022	12/8/2022	12/8/2022	6/11/2024	12/8/2022	6/11/2024	6/11/2024	12/8/2022	12/5/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.064 J (0.066)	ND (0.00059)	ND (0.00073)	ND (0.31)	ND (0.00087)	0.067 (0.032)	0.12 (0.046)	ND (0.00069)	ND (0.00048)
Cumene	10000	2500	0.27 (0.13)	ND (0.0012)	0.00073 J (0.0015)	0.28 J (0.62)	0.0033 (0.0017)	0.48 (0.064)	2 (0.091)	ND (0.0014)	ND (0.00097)
1,2-Dibromoethane	3.7	0.005	ND (0.066)	ND (0.00059)	ND (0.00073)	ND (0.31)	ND (0.00087)	ND (0.032)	ND (0.046)	ND (0.00069)	ND (0.00048)
1,2-Dichloroethane	85	0.5	ND (0.13)	ND (0.0012)	ND (0.0015)	ND (0.62)	ND (0.0017)	ND (0.064)	ND (0.091)	ND (0.0014)	ND (0.00097)
Ethyl Benzene	880	70	0.075 J (0.13)	ND (0.0012)	0.00026 J (0.0015)	0.16 J (0.62)	0.0006 J (0.0017)	0.23 (0.064)	1.9 (0.091)	ND (0.0014)	ND (0.00097)
Methyl tert-butyl ether	8500	2	ND (0.26)	ND (0.0024)	0.0014 J (0.0029)	ND (1.2)	ND (0.0035)	ND (0.13)	ND (0.18)	ND (0.0028)	ND (0.0019)
Toluene	10000	100	0.99 (0.13)	ND (0.0012)	ND (0.0015)	0.6 J (0.62)	ND (0.0017)	0.078 (0.064)	0.084 J (0.091)	ND (0.0014)	ND (0.00097)
1,2,4-Trimethylbenzene	4700	300	0.13 J (0.26)	ND (0.0024)	0.001 J (0.0029)	5.5 (1.2)	0.00098 J (0.0035)	3 (0.13)	20 (0.18)	ND (0.0028)	ND (0.0019)
1,3,5-Trimethylbenzene	4700	93	0.035 J (0.26)	ND (0.0024)	0.00032 J (0.0029)	2.6 (1.2)	0.00049 J (0.0035)	0.9 (0.13)	3.6 (0.18)	ND (0.0028)	ND (0.0019)
Xylenes (total)	7900	1000	0.28 J (0.13)	ND (0.0012)	0.0008 J (0.0015)	ND (0.62)	0.0033 J (0.0017)	0.21 J (0.064)	1.1 J (0.091)	ND (0.0014)	ND (0.00097)
Semivolatile Organic Compounds											
Anthracene	190000	350	4.7 (0.17)	ND (0.14)	4.6 (0.13)	0.25 (0.11)	2.9 (0.16)	0.065 J (0.11)	0.19 (0.15)	0.091 J (0.12)	0.17 (0.12)
Benzo(a)anthracene	130	340	4.4 (0.17)	0.045 J (0.14)	4.8 (0.13)	0.18 (0.11)	2.1 (0.16)	0.093 J (0.11)	0.51 (0.15)	0.32 (0.12)	0.16 (0.12)
Benzo(a)pyrene	91	46	2.8 (0.22)	ND (0.18)	3.2 (0.18)	0.14 J (0.15)	2.8 (0.21)	0.09 J (0.15)	0.52 (0.2)	0.32 (0.16)	0.13 J (0.16)
Benzo(b)fluoranthene	76	170	3.5 (0.17)	ND (0.14)	4 (0.13)	0.19 (0.11)	2.9 (0.16)	0.12 (0.11)	0.73 (0.15)	0.42 (0.12)	0.14 (0.12)
Benzo(g,h,i)perylene	190000	180	1.4 (0.22)	ND (0.18)	1.6 (0.18)	0.091 J (0.15)	3.5 (0.21)	0.079 J (0.15)	0.35 (0.2)	0.2 (0.16)	0.1 J (0.16)
Chrysene	760	230	4.8 (0.17)	0.037 J (0.14)	4.9 (0.13)	0.2 (0.11)	2.4 (0.16)	0.1 J (0.11)	0.63 (0.15)	0.37 (0.12)	0.17 (0.12)
Fluorene	130000	3800	5.4 (0.28)	ND (0.23)	5 (0.22)	1.4 (0.19)	1.2 (0.26)	0.31 (0.18)	0.1 J (0.25)	0.046 J (0.2)	0.13 J (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	0.091 J (0.15)	NA	0.067 J (0.15)	0.34 (0.2)	NA	0.078 J (0.16)
Naphthalene	66	25	9.1 (0.28)	ND (0.23)	7.7 (0.22)	4.2 (0.038)	20 (1.3)	1.5 (0.037)	0.28 (0.051)	0.03 J (0.2)	0.53 (0.04)
Phenanthrene	190000	10000	20 (0.84)	0.053 J (0.14)	13 (0.67)	1.2 (0.11)	5.7 (0.16)	0.33 (0.11)	0.55 (0.15)	0.31 (0.12)	0.14 (0.12)
Pyrene	96000	2200	12 (0.84)	0.054 J (0.14)	11 (0.67)	0.46 (0.11)	2.7 (0.16)	0.21 (0.11)	0.86 (0.15)	0.42 (0.12)	0.37 (0.12)
Metals											
Lead	1000	450	537 (3.42)	14.9 (2.85)	400 (2.62)	42.7 (4.5)	589 (3.04)	65 (4.33)	73.1 (5.88)	215 (2.36)	182 (2.41)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR270-14	GPR270-14	GPR270-15	GPR270-16	GPR270-17	GPR270-17	GPR270-17	GPR270-18	GPR270-18
Field Sample ID			GPR270-14-2.0-2.5	GPR270-14-3.5-4.0	GPR270-15-3.0-3.5	GPR270-16-3.5-4.0	GPR270-17-1.5-2.0	GPR270-17-2.0-2.5	GPR270-17-5.5-6.0	GPR270-18-0.5-1.0	GPR270-18-2.0-2.5
Collection Depth (ft bgs)			2.0 - 2.5	3.5 - 4.0	3.0 - 3.5	3.5 - 4.0	1.5 - 2.0	2.0 - 2.5	5.5 - 6.0	0.5 - 1.0	2.0 - 2.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/5/2023	12/5/2023	4/18/2024	4/18/2024	4/18/2024	4/18/2024	4/18/2024	4/19/2024	4/19/2024
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.53 (0.045)	ND (0.0008)	ND (0.00073)	ND (0.00066)	0.00031 J (0.00049)	0.00032 J (0.00052)	ND (0.00058)	0.029 (0.00048)	ND (0.00049)
Cumene	10000	2500	0.021 J (0.09)	0.0053 (0.0016)	0.00094 J (0.0014)	ND (0.0013)	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.045)	ND (0.0008)	ND (0.00073)	ND (0.00066)	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.09)	ND (0.0016)	ND (0.0014)	ND (0.0013)	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	0.12 (0.09)	ND (0.0016)	ND (0.0014)	ND (0.0013)	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.18)	ND (0.0032)	ND (0.0029)	ND (0.0026)	NA	NA	NA	NA	NA
Toluene	10000	100	1.1 (0.09)	ND (0.0016)	ND (0.0014)	ND (0.0013)	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	0.12 J (0.18)	0.0013 J (0.0032)	ND (0.0029)	ND (0.0026)	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.036 J (0.18)	0.00041 J (0.0032)	ND (0.0029)	ND (0.0026)	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	0.86 (0.09)	0.0015 J (0.0016)	0.0022 J (0.0014)	ND (0.0013)	NA	NA	NA	NA	NA
Semivolatile Organic Compounds											
Anthracene	190000	350	3.8 (0.75)	4.7 (0.77)	1.2 (0.14)	1.6 (0.14)	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	2.7 (0.75)	3.3 (0.77)	0.85 (0.14)	0.99 (0.14)	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	1.8 (0.99)	2.5 (1)	1.4 (0.19)	1.8 (0.19)	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	2 (0.75)	2.8 (0.77)	2 (0.7)	3.1 (0.72)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.98 J (0.99)	1.3 (1)	1.3 (0.19)	1.3 (0.19)	NA	NA	NA	NA	NA
Chrysene	760	230	2.7 (0.75)	3.8 (0.77)	0.99 (0.14)	1.5 (0.14)	NA	NA	NA	NA	NA
Fluorene	130000	3800	5 (1.2)	4.8 (1.3)	0.45 (0.23)	1.4 (0.24)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	1 (0.99)	1.2 (1)	0.97 (0.19)	0.96 (0.19)	NA	NA	NA	NA	NA
Naphthalene	66	25	11 (0.25)	13 (0.26)	12 (0.23)	14 (0.24)	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	4.7 (0.75)	13 (0.77)	2.4 (0.14)	3.6 (0.14)	NA	NA	NA	NA	NA
Pyrene	96000	2200	8.4 (0.75)	9.5 (0.77)	1.1 (0.14)	2.2 (0.14)	NA	NA	NA	NA	NA
Metals											
Lead	1000	450	422 (2.89)	385 (3.01)	394 (5.52)	235 (5.51)	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR270-18	GPR270-19	GPR270-19	GPR270-19	GPR272-01	GPR272-02	GPR272-03	GPR272-04	GPR272-05
Field Sample ID			GPR270-18-6.5-7.0	GPR270-19-1.0-1.5	GPR270-19-2.0-2.5	GPR270-19-6.5-7.0	GPR-272-1-SS01	GPR-272-2-SS01	GPR-272-3-SS01	GPR-272-4-SS01	GPR-272-5-SS01
Collection Depth (ft bgs)			6.5 - 7.0	1.0 - 1.5	2.0 - 2.5	6.5 - 7.0	1.0 - 1.5	3.5 - 4.0	1.5 - 2.0	0.5 - 1.0	0.5 - 1.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			4/19/2024	4/19/2024	4/19/2024	4/19/2024	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00088)	0.43 (0.029)	0.69 (0.026)	ND (0.00064)	0.00025 J (0.0007)	0.00029 J (0.0007)	0.0014 (0.00095)	ND (0.00075)	ND (0.00064)
Cumene	10000	2500	NA	NA	NA	NA	0.05 (0.0014)	ND (0.0014)	0.00042 J (0.0019)	0.00023 J (0.0015)	ND (0.0013)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	ND (0.0007)	ND (0.0007)	ND (0.00095)	ND (0.00075)	ND (0.00064)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	ND (0.0014)	ND (0.0014)	ND (0.0019)	ND (0.0015)	ND (0.0013)
Ethyl Benzene	880	70	NA	NA	NA	NA	ND (0.0014)	ND (0.0014)	0.00036 J (0.0019)	ND (0.0015)	ND (0.0013)
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	ND (0.0028)	ND (0.0028)	ND (0.0038)	ND (0.003)	ND (0.0026)
Toluene	10000	100	NA	NA	NA	NA	0.0019 (0.0014)	ND (0.0014)	0.0013 J (0.0019)	ND (0.0015)	ND (0.0013)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	0.0033 (0.0028)	0.00046 J (0.0028)	0.0014 J (0.0038)	ND (0.003)	ND (0.0026)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	0.0008 J (0.0028)	ND (0.0028)	0.00068 J (0.0038)	ND (0.003)	ND (0.0026)
Xylenes (total)	7900	1000	NA	NA	NA	NA	0.0069 (0.0014)	ND (0.0014)	0.0025 J (0.0019)	ND (0.0015)	ND (0.0013)
Semivolatile Organic Compounds											
Anthracene	190000	350	NA	NA	NA	NA	ND (0.43)	0.54 (0.39)	0.47 (0.43)	0.24 J (0.39)	ND (0.38)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	0.22 J (0.43)	0.86 (0.39)	3.4 (0.43)	0.44 (0.39)	0.12 J (0.38)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	0.3 J (0.57)	1.3 (0.52)	4.1 (0.57)	0.57 (0.52)	ND (0.5)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	0.35 J (0.43)	1.2 (0.39)	4.8 (0.43)	0.66 (0.39)	0.15 J (0.38)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	0.22 J (0.57)	0.77 (0.52)	2.3 (0.57)	0.38 J (0.52)	0.12 J (0.5)
Chrysene	760	230	NA	NA	NA	NA	0.24 J (0.43)	0.93 (0.39)	3.2 (0.43)	0.53 (0.39)	0.15 J (0.38)
Fluorene	130000	3800	NA	NA	NA	NA	0.074 J (0.71)	0.3 J (0.65)	0.28 J (0.71)	0.26 J (0.66)	0.066 J (0.63)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	0.24 J (0.57)	0.82 (0.52)	2.8 (0.57)	0.43 J (0.52)	0.11 J (0.5)
Naphthalene	66	25	NA	NA	NA	NA	1.3 (0.14)	3 (0.13)	3.8 (0.14)	2.6 (0.13)	1 (0.12)
Phenanthrene	190000	10000	NA	NA	NA	NA	0.28 J (0.43)	1 (0.39)	1.2 (0.43)	0.61 (0.39)	0.3 J (0.38)
Pyrene	96000	2200	NA	NA	NA	NA	0.3 J (0.43)	1.2 (0.39)	3.5 (0.43)	0.74 (0.39)	0.16 J (0.38)
Metals											
Lead	1000	450	NA	NA	NA	NA	164 (2.86)	145 (2.64)	273 (3.01)	275 (2.66)	438 (2.51)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR272-06	GPR272-07	GPR272-09	GPR272-10	GPR272-10	GPR272-11	GPR272-12	GPR272-13	GPR272-14
Field Sample ID			GPR272-06-SS01	GPR272-07-SS01	GPR-272-9-SS01	GPR272-10-SS01	DUP55	GPR272-11-SS01	GPR-272-12-SS01	GPR-272-13-SS01	GPR-272-14-SS01
Collection Depth (ft bgs)			0.5 - 1.0	4.0 - 4.5	2.0 - 2.5	3.0 - 3.5	3.0 - 3.5	1.0 - 1.5	0.5 - 1.0	2.0 - 2.5	0.5 - 1.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			6/16/2023	6/16/2023	6/20/2023	6/16/2023	6/16/2023	6/16/2023	6/20/2023	6/20/2023	6/20/2023
Comments							Field Duplicate				
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00068)	ND (0.00086)	ND (0.00069)	ND (0.00078)	ND (0.0008)	ND (0.00093)	ND (0.00082)	0.00025 J (0.00064)	ND (0.0006)
Cumene	10000	2500	ND (0.0014)	ND (0.0017)	0.00076 J (0.0014)	ND (0.0016)	ND (0.0016)	0.001 J (0.0019)	ND (0.0016)	ND (0.0013)	ND (0.0012)
1,2-Dibromoethane	3.7	0.005	ND (0.00068)	ND (0.00086)	ND (0.00069)	ND (0.00078)	ND (0.0008)	ND (0.00093)	ND (0.00082)	ND (0.00064)	ND (0.0006)
1,2-Dichloroethane	85	0.5	ND (0.0014)	ND (0.0017)	ND (0.0014)	ND (0.0016)	ND (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0013)	ND (0.0012)
Ethyl Benzene	880	70	ND (0.0014)	ND (0.0017)	0.00025 J (0.0014)	ND (0.0016)	ND (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0013)	ND (0.0012)
Methyl tert-butyl ether	8500	2	ND (0.0027)	ND (0.0034)	ND (0.0028)	ND (0.0031)	ND (0.0032)	ND (0.0037)	ND (0.0033)	ND (0.0026)	ND (0.0024)
Toluene	10000	100	ND (0.0014)	ND (0.0017)	0.00089 J (0.0014)	ND (0.0016)	ND (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0013)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	300	ND (0.0027)	ND (0.0034)	0.0016 J (0.0028)	ND (0.0031)	ND (0.0032)	ND (0.0037)	ND (0.0033)	ND (0.0026)	ND (0.0024)
1,3,5-Trimethylbenzene	4700	93	ND (0.0027)	ND (0.0034)	0.0011 J (0.0028)	ND (0.0031)	ND (0.0032)	ND (0.0037)	ND (0.0033)	ND (0.0026)	ND (0.0024)
Xylenes (total)	7900	1000	ND (0.0014)	ND (0.0017)	0.00094 J (0.0014)	ND (0.0016)	ND (0.0016)	ND (0.0019)	ND (0.0016)	ND (0.0013)	ND (0.0012)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.081 J (0.14)	0.15 (0.15)	0.23 J (0.39)	ND (0.16)	0.19 (0.16)	0.61 (0.18)	0.33 J (0.51)	ND (0.42)	0.052 J (0.12)
Benzo(a)anthracene	130	340	0.28 (0.14)	0.23 (0.15)	0.61 (0.39)	0.064 J (0.16)	0.44 (0.16)	0.66 (0.18)	0.63 (0.51)	0.1 J (0.42)	0.21 (0.12)
Benzo(a)pyrene	91	46	0.46 (0.19)	0.27 (0.2)	0.86 (0.52)	ND (0.21)	0.83 (0.21)	0.93 (0.24)	1.1 (0.68)	ND (0.56)	0.27 (0.16)
Benzo(b)fluoranthene	76	170	0.49 (0.14)	0.28 (0.15)	0.87 (0.39)	0.065 J (0.16)	0.75 (0.16)	0.94 (0.18)	1.2 (0.51)	ND (0.42)	0.32 (0.12)
Benzo(g,h,i)perylene	190000	180	0.32 (0.19)	0.16 J (0.2)	0.58 (0.52)	0.034 J (0.21)	0.6 (0.21)	0.68 (0.24)	0.89 (0.68)	ND (0.56)	0.18 (0.16)
Chrysene	760	230	0.33 (0.14)	0.29 (0.15)	0.72 (0.39)	0.089 J (0.16)	0.48 (0.16)	0.81 (0.18)	0.63 (0.51)	0.1 J (0.42)	0.22 (0.12)
Fluorene	130000	3800	0.041 J (0.24)	0.22 J (0.25)	0.23 J (0.65)	0.069 J (0.27)	0.16 J (0.26)	0.47 (0.29)	0.24 J (0.85)	ND (0.7)	0.027 J (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	0.37 (0.19)	0.18 J (0.2)	0.62 (0.52)	ND (0.21)	0.5 (0.21)	0.49 (0.24)	0.89 (0.68)	ND (0.56)	0.2 (0.16)
Naphthalene	66	25	0.64 (0.048)	1.1 (0.051)	1.8 (0.13)	0.31 (0.054)	2.7 (0.052)	5.3 (0.059)	4.9 (0.17)	0.29 (0.14)	0.48 (0.041)
Phenanthrene	190000	10000	0.14 (0.14)	0.3 (0.15)	0.73 (0.39)	0.23 (0.16)	0.48 (0.16)	1.2 (0.18)	0.75 (0.51)	0.13 J (0.42)	0.17 (0.12)
Pyrene	96000	2200	0.25 (0.14)	0.5 (0.15)	1 (0.39)	0.22 (0.16)	0.51 (0.16)	1.6 (0.18)	0.62 (0.51)	0.18 J (0.42)	0.21 (0.12)
Metals											
Lead	1000	450	136 (2.77)	238 (2.99)	101 (2.69)	320 (3.15)	139 (3.01)	368 (3.36)	393 (3.31)	210 (2.85)	271 (2.39)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR272-15	GPR273-01	GPR273-02	GPR273-03	GPR273-04	GPR273-05	GPR273-07	GPR273-08	GPR273-09
Field Sample ID			GPR-272-15-SS01	GPR-273-1-SS01	GPR-273-2-SS01	GPR-273-3-SS01	GPR-273-4-SS01	GPR-273-5-SS01	GPR-273-7-SS01	GPR-273-8-SS01	GPR-273-9-SS01
Collection Depth (ft bgs)			4.0 - 4.5	2.0 - 2.5	3.0 - 3.5	4.0 - 4.5	4.0 - 4.5	1.5 - 2.0	4.0 - 4.5	2.0 - 2.5	1.0 - 1.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00076)	0.069 J (0.071)	0.00047 J (0.00098)	ND (0.00098)	ND (0.001)	0.0056 (0.00074)	ND (0.00068)	ND (0.00084)	ND (0.00064)
Cumene	10000	2500	0.0015 (0.0015)	8.5 (0.14)	0.033 (0.002)	0.11 (0.002)	0.052 (0.0021)	0.031 (0.0015)	0.019 (0.0014)	0.012 (0.0017)	0.00043 J (0.0013)
1,2-Dibromoethane	3.7	0.005	ND (0.00076)	ND (0.00094)	ND (0.00098)	ND (0.00098)	ND (0.001)	ND (0.00074)	ND (0.00068)	ND (0.00084)	ND (0.00064)
1,2-Dichloroethane	85	0.5	ND (0.0015)	ND (0.0019)	ND (0.002)	ND (0.002)	ND (0.0021)	ND (0.0015)	ND (0.0014)	ND (0.0017)	ND (0.0013)
Ethyl Benzene	880	70	ND (0.0015)	0.11 J (0.14)	ND (0.002)	0.00068 J (0.002)	ND (0.0021)	0.0024 (0.0015)	ND (0.0014)	ND (0.0017)	ND (0.0013)
Methyl tert-butyl ether	8500	2	ND (0.003)	0.00075 J (0.0038)	ND (0.0039)	ND (0.0039)	ND (0.0042)	0.00046 J (0.003)	ND (0.0027)	0.0029 J (0.0034)	ND (0.0025)
Toluene	10000	100	ND (0.0015)	0.98 (0.14)	0.0018 J (0.002)	ND (0.002)	ND (0.0021)	0.0097 (0.0015)	0.0012 J (0.0014)	0.00096 J (0.0017)	ND (0.0013)
1,2,4-Trimethylbenzene	4700	300	0.0025 J (0.003)	0.35 (0.0038)	0.013 (0.0039)	0.012 (0.0039)	0.006 (0.0042)	0.011 (0.003)	0.0048 (0.0027)	0.003 J (0.0034)	ND (0.0025)
1,3,5-Trimethylbenzene	4700	93	0.0011 J (0.003)	0.12 (0.0038)	0.0059 (0.0039)	0.0086 (0.0039)	0.0022 J (0.0042)	0.0053 (0.003)	0.001 J (0.0027)	0.0011 J (0.0034)	ND (0.0025)
Xylenes (total)	7900	1000	0.0024 (0.0015)	0.75 (0.0019)	0.016 (0.002)	0.0095 (0.002)	0.005 J (0.0021)	0.018 (0.0015)	0.005 J (0.0014)	0.0044 J (0.0017)	ND (0.0013)
Semivolatile Organic Compounds											
Anthracene	190000	350	1.6 (0.14)	0.67 (0.52)	0.64 (0.53)	0.77 (0.5)	1.4 (0.53)	0.18 J (0.39)	0.22 J (0.38)	2 (0.49)	0.28 J (0.34)
Benzo(a)anthracene	130	340	2.5 (0.14)	1.4 (0.52)	0.7 (0.53)	1.1 (0.5)	0.94 (0.53)	0.12 J (0.39)	0.28 J (0.38)	1.5 (0.49)	0.53 (0.34)
Benzo(a)pyrene	91	46	4.2 (0.19)	1.3 (0.7)	0.42 J (0.71)	0.9 (0.67)	0.77 (0.7)	ND (0.52)	0.19 J (0.5)	1.1 (0.66)	0.66 (0.46)
Benzo(b)fluoranthene	76	170	4.3 (0.14)	1.3 (0.52)	0.47 J (0.53)	0.92 (0.5)	0.72 (0.53)	0.15 J (0.39)	0.22 J (0.38)	1.2 (0.49)	0.73 (0.34)
Benzo(g,h,i)perylene	190000	180	2.5 (0.19)	0.72 (0.7)	0.21 J (0.71)	0.42 J (0.67)	0.32 J (0.7)	0.22 J (0.52)	0.13 J (0.5)	0.51 J (0.66)	0.67 (0.46)
Chrysene	760	230	3.2 (0.14)	1.6 (0.52)	0.83 (0.53)	1 (0.5)	1.1 (0.53)	0.15 J (0.39)	0.33 J (0.38)	1.7 (0.49)	0.57 (0.34)
Fluorene	130000	3800	1.6 (0.24)	0.79 J (0.87)	0.88 J (0.89)	0.9 (0.83)	1.4 (0.88)	0.15 J (0.65)	0.33 J (0.63)	2.3 (0.82)	0.11 J (0.58)
Indeno(1,2,3-cd)pyrene	76	18000	2.6 (0.19)	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	13 (0.24)	2.5 (0.17)	2 (0.18)	1.2 (0.17)	2.4 (0.18)	1.7 (0.13)	0.7 (0.12)	5.1 (0.16)	1.7 (0.12)
Phenanthrene	190000	10000	5.2 (0.14)	3.3 (0.52)	1.9 (0.53)	3 (0.5)	4.8 (0.53)	0.45 (0.39)	1 (0.38)	8.2 (0.49)	0.57 (0.34)
Pyrene	96000	2200	5 (0.14)	3.2 (0.52)	2.3 (0.53)	1.9 (0.5)	2.2 (0.53)	0.25 J (0.39)	0.78 (0.38)	4.3 (0.49)	0.62 (0.34)
Metals											
Lead	1000	450	235 (2.93)	272 (3.53)	377 (3.49)	157 (3.45)	205 (3.73)	480 (2.67)	186 (2.54)	410 (3.2)	293 (2.32)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR273-09	GPR273-11	GPR273-12	GPR273-13	GPR273-14	GPR276-01	GPR276-03	GPR276-05	GPR276-06
Field Sample ID			DUP-56	GPR-273-11-SS01	GPR-273-12-SS01	GPR-273-13-SS01	GPR-273-14-SS01	GPR276-01-SS01	GPR276-03-SS01	GPR276-05-SS01	GPR276-06-SS01
Collection Depth (ft bgs)			1.0 - 1.5	1.5 - 2.0	4.0 - 4.5	2.0 - 2.5	3.0 - 3.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			6/20/2023	6/20/2023	6/20/2023	6/20/2023	6/20/2023	12/7/2022	12/7/2022	12/7/2022	12/7/2022
Comments			Field Duplicate								
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.0019 (0.00083)	ND (0.00079)	ND (0.00081)	ND (0.00078)	ND (0.00068)	0.04 J (0.064)	0.96 (0.056)	ND (0.00095)	ND (0.00056)
Cumene	10000	2500	6.9 (0.13)	0.0028 (0.0016)	0.0032 (0.0016)	0.0044 (0.0016)	0.00032 J (0.0014)	0.1 J (0.13)	1.1 (0.11)	ND (0.0019)	0.00047 J (0.0011)
1,2-Dibromoethane	3.7	0.005	ND (0.00083)	ND (0.00079)	ND (0.00081)	ND (0.00078)	ND (0.00068)	ND (0.064)	ND (0.056)	ND (0.00095)	ND (0.00056)
1,2-Dichloroethane	85	0.5	ND (0.0017)	ND (0.0016)	ND (0.0016)	ND (0.0016)	ND (0.0014)	ND (0.13)	ND (0.11)	ND (0.0019)	ND (0.0011)
Ethyl Benzene	880	70	0.086 J (0.13)	ND (0.0016)	ND (0.0016)	0.00022 J (0.0016)	ND (0.0014)	0.06 J (0.13)	0.51 (0.11)	ND (0.0019)	0.00027 J (0.0011)
Methyl tert-butyl ether	8500	2	ND (0.0033)	ND (0.0032)	ND (0.0032)	ND (0.0031)	ND (0.0027)	ND (0.25)	ND (0.23)	ND (0.0038)	ND (0.0022)
Toluene	10000	100	0.26 (0.13)	ND (0.0016)	ND (0.0016)	ND (0.0016)	ND (0.0014)	0.68 (0.13)	1.4 (0.11)	ND (0.0019)	ND (0.0011)
1,2,4-Trimethylbenzene	4700	300	0.31 (0.26)	ND (0.0032)	0.0015 J (0.0032)	0.0022 J (0.0031)	ND (0.0027)	0.076 J (0.25)	0.77 (0.23)	ND (0.0038)	0.0033 (0.0022)
1,3,5-Trimethylbenzene	4700	93	0.1 J (0.26)	0.00041 J (0.0032)	0.0012 J (0.0032)	0.0011 J (0.0031)	ND (0.0027)	0.028 J (0.25)	0.3 (0.23)	ND (0.0038)	0.0067 (0.0022)
Xylenes (total)	7900	1000	0.42 J (0.13)	ND (0.0016)	0.00062 J (0.0016)	0.0011 J (0.0016)	ND (0.0014)	0.16 J (0.13)	1.8 (0.11)	ND (0.0019)	0.0052 (0.0011)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.35 (0.16)	ND (0.46)	0.58 (0.46)	0.15 J (0.45)	0.2 J (0.39)	2.8 (0.16)	0.28 (0.14)	1.1 (0.15)	0.27 (0.11)
Benzo(a)anthracene	130	340	0.36 (0.16)	0.35 J (0.46)	0.66 (0.46)	0.23 J (0.45)	0.21 J (0.39)	2.3 (0.16)	0.68 (0.14)	1.5 (0.15)	0.49 (0.11)
Benzo(a)pyrene	91	46	0.25 (0.21)	0.42 J (0.62)	0.75 (0.61)	0.22 J (0.6)	0.22 J (0.52)	2.6 (0.22)	0.88 (0.18)	1.7 (0.2)	0.51 (0.15)
Benzo(b)fluoranthene	76	170	0.26 (0.16)	0.48 (0.46)	0.76 (0.46)	0.22 J (0.45)	0.25 J (0.39)	2.7 (0.82)	1 (0.14)	1.8 (0.15)	0.57 (0.11)
Benzo(g,h,i)perylene	190000	180	0.13 J (0.21)	0.28 J (0.62)	0.6 J (0.61)	0.18 J (0.6)	0.16 J (0.52)	1.3 (0.22)	0.68 (0.18)	0.99 (0.2)	0.28 (0.15)
Chrysene	760	230	0.37 (0.16)	0.36 J (0.46)	0.89 (0.46)	0.28 J (0.45)	0.27 J (0.39)	3.5 (0.16)	0.64 (0.14)	1.5 (0.15)	0.44 (0.11)
Fluorene	130000	3800	0.5 (0.27)	ND (0.77)	0.57 J (0.76)	0.14 J (0.76)	0.17 J (0.65)	3 (0.28)	0.2 J (0.23)	0.93 (0.24)	0.2 (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.76 (0.053)	0.75 (0.15)	3.5 (0.15)	1.1 (0.15)	1.8 (0.13)	14 (1.4)	1.3 (0.23)	16 (1.2)	2 (0.19)
Phenanthrene	190000	10000	1.5 (0.16)	0.23 J (0.46)	1.9 (0.46)	0.35 J (0.45)	0.5 (0.39)	5.5 (0.16)	0.72 (0.14)	3.9 (0.15)	0.96 (0.11)
Pyrene	96000	2200	0.81 (0.16)	0.35 J (0.46)	2.1 (0.46)	0.44 J (0.45)	0.48 (0.39)	7 (0.16)	1.1 (0.14)	2.5 (0.15)	0.76 (0.11)
Metals											
Lead	1000	450	154 (3.18)	410 (2.99)	429 (3.07)	401 (2.93)	329 (2.64)	475 (3.17)	84.6 (2.73)	198 (2.83)	82.9 (2.26)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR276-07	GPR276-11	GPR276-12R	GPR276-12R	GPR276-12	GPR276-12R	GPR276-12R	GPR276-13	GPR276-15
Field Sample ID			GPR276-07-SS01	GPR276-11-SS01	TG06-MW02-0.5-1.0	TG06-MW02-2.0-2.5	GPR276-12-SS01	TG06-MW02-6.0-6.5	TG06-MW02-9.5-10.0	GPR276-13-SS01	GPR276-15-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	0.5 - 1.0	2.0 - 2.5	4.5 - 5.0	6.0 - 6.5	9.5 - 10.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/7/2022	12/7/2022	11/30/2023	11/30/2023	12/7/2022	11/30/2023	11/30/2023	12/7/2022	12/7/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00046)	ND (0.00083)	ND (0.0005)	ND (0.00071)	7.9 (0.07)	ND (0.00096)	ND (0.00076)	ND (0.00081)	0.083 (0.028)
Cumene	10000	2500	ND (0.00092)	0.00046 J (0.0016)	ND (0.00099)	0.00066 J (0.0014)	1.4 (0.14)	0.00026 J (0.0019)	ND (0.0015)	ND (0.0016)	0.26 (0.056)
1,2-Dibromoethane	3.7	0.005	ND (0.00046)	ND (0.00083)	ND (0.0005)	ND (0.00071)	ND (0.07)	ND (0.00096)	ND (0.00076)	ND (0.00081)	ND (0.028)
1,2-Dichloroethane	85	0.5	ND (0.00092)	ND (0.0016)	ND (0.00099)	ND (0.0014)	ND (0.14)	ND (0.0019)	ND (0.0015)	ND (0.0016)	0.037 J (0.056)
Ethyl Benzene	880	70	ND (0.00092)	ND (0.0016)	ND (0.00099)	0.0003 J (0.0014)	4.2 (0.14)	ND (0.0019)	ND (0.0015)	ND (0.0016)	0.087 (0.056)
Methyl tert-butyl ether	8500	2	ND (0.0018)	ND (0.0033)	ND (0.002)	ND (0.0028)	ND (0.28)	ND (0.0038)	ND (0.003)	ND (0.0032)	ND (0.11)
Toluene	10000	100	ND (0.00092)	ND (0.0016)	ND (0.00099)	ND (0.0014)	4.8 (0.14)	ND (0.0019)	ND (0.0015)	ND (0.0016)	0.27 (0.056)
1,2,4-Trimethylbenzene	4700	300	ND (0.0018)	0.0022 J (0.0033)	ND (0.002)	0.0016 J (0.0028)	2.8 (0.28)	0.0025 J (0.0038)	0.00083 J (0.003)	ND (0.0032)	0.066 J (0.11)
1,3,5-Trimethylbenzene	4700	93	ND (0.0018)	0.00063 J (0.0033)	ND (0.002)	0.0011 J (0.0028)	0.9 (0.28)	0.0012 J (0.0038)	0.00031 J (0.003)	ND (0.0032)	0.051 J (0.11)
Xylenes (total)	7900	1000	ND (0.00092)	0.00062 J (0.0016)	ND (0.00099)	0.0049 (0.0014)	12 (0.14)	0.0031 J (0.0019)	0.00083 J (0.0015)	ND (0.0016)	0.4 J (0.056)
Semivolatile Organic Compounds											
Anthracene	190000	350	1.4 (0.11)	0.85 (0.15)	0.13 (0.11)	0.39 J (0.66)	1.4 (0.13)	0.85 J (0.88)	0.51 (0.16)	1.4 (0.15)	0.17 (0.11)
Benzo(a)anthracene	130	340	2.2 (0.11)	1.8 (0.15)	0.27 (0.11)	1.2 (0.66)	8.5 (0.64)	0.84 J (0.88)	1.6 (0.16)	2.9 (0.15)	0.35 (0.11)
Benzo(a)pyrene	91	46	1.9 (0.14)	2.2 (0.2)	0.26 (0.15)	1.6 (0.88)	9.2 (0.86)	1 J (1.2)	2.6 (0.22)	4 (0.2)	0.38 (0.15)
Benzo(b)fluoranthene	76	170	2.2 (0.11)	2.4 (0.15)	0.32 (0.11)	1.8 (0.66)	10 (0.64)	1.1 (0.88)	2.4 (0.16)	4.4 (0.15)	0.47 (0.11)
Benzo(g,h,i)perylene	190000	180	0.86 (0.14)	1.5 (0.2)	0.22 (0.15)	1.2 (0.88)	5.4 (0.17)	0.68 J (1.2)	1.5 (0.22)	2.6 (0.2)	0.22 (0.15)
Chrysene	760	230	1.9 (0.11)	1.7 (0.15)	0.24 (0.11)	1.2 (0.66)	7.2 (0.13)	1.2 (0.88)	1.7 (0.16)	3 (0.15)	0.37 (0.11)
Fluorene	130000	3800	0.71 (0.18)	0.49 (0.26)	0.058 J (0.19)	0.17 J (1.1)	0.4 (0.21)	0.64 J (1.5)	0.26 J (0.28)	0.79 (0.25)	0.13 J (0.18)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.38 (0.18)	7.9 (0.26)	ND (0.038)	1.3 (0.22)	4.2 (0.21)	4.3 (0.29)	1.9 (0.055)	14 (1.2)	5.8 (0.18)
Phenanthrene	190000	10000	4.6 (0.11)	2.7 (0.15)	0.48 (0.11)	0.88 (0.66)	3 (0.13)	1.8 (0.88)	1.2 (0.16)	4 (0.15)	0.73 (0.11)
Pyrene	96000	2200	3.6 (0.11)	2.6 (0.15)	0.43 (0.11)	1.7 (0.66)	8 (0.13)	2.2 (0.88)	2 (0.16)	3.9 (0.15)	0.64 (0.11)
Metals											
Lead	1000	450	896 (2.17)	397 (3.03)	112 (2.27)	167 (2.61)	131 (2.58)	390 (3.39)	152 (3.19)	167 (2.84)	7.08 (2.13)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR276-16R	GPR276-16R	GPR276-16	GPR276-16R	GPR276-16R	GPR276-17	GPR276-18	GPR276-18	GPR276-18
Field Sample ID			GPR276-16R-0.5-1.0	GPR276-16R-2.0-2.5	GPR276-16-SS01	GPR276-16R-5.0-5.5	GPR276-16R-9.5-10.0	GPR276-17-SS01	GPR276-18-0.5-1.0	GPR276-18-4.5-5.0	GPR276-18-9.5-10.0
Collection Depth (ft bgs)			0.5 - 1.0	2.0 - 2.5	4.5 - 5.0	5.0 - 5.5	9.5 - 10.0	4.5 - 5.0	0.5 - 1.0	4.5 - 5.0	9.5 - 10.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			11/30/2023	11/30/2023	12/7/2022	11/30/2023	11/30/2023	12/7/2022	11/30/2023	11/30/2023	11/30/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.42 (0.026)	0.77 (0.053)	0.014 (0.0009)	0.059 J (0.064)	ND (0.001)	0.17 (0.059)	0.00073 (0.00066)	ND (0.00073)	ND (0.0009)
Cumene	10000	2500	0.46 (0.052)	1.1 (0.11)	0.26 (0.0018)	0.11 J (0.13)	0.0014 J (0.0021)	1.4 (0.12)	ND (0.0013)	0.0088 (0.0014)	0.01 (0.0018)
1,2-Dibromoethane	3.7	0.005	ND (0.026)	ND (0.053)	ND (0.0009)	ND (0.064)	ND (0.001)	ND (0.059)	ND (0.00066)	ND (0.00073)	ND (0.0009)
1,2-Dichloroethane	85	0.5	ND (0.052)	ND (0.11)	ND (0.0018)	ND (0.13)	ND (0.0021)	ND (0.12)	ND (0.0013)	ND (0.0014)	ND (0.0018)
Ethyl Benzene	880	70	0.23 (0.052)	0.39 (0.11)	ND (0.0018)	0.054 J (0.13)	0.00054 J (0.0021)	0.32 (0.12)	0.00036 J (0.0013)	ND (0.0014)	0.00057 J (0.0018)
Methyl tert-butyl ether	8500	2	ND (0.1)	ND (0.21)	ND (0.0036)	ND (0.26)	ND (0.0042)	ND (0.24)	ND (0.0026)	0.0089 (0.0029)	0.00042 J (0.0036)
Toluene	10000	100	0.6 (0.052)	1.1 (0.11)	0.013 (0.0018)	0.47 (0.13)	ND (0.0021)	1 (0.12)	0.00086 J (0.0013)	ND (0.0014)	ND (0.0018)
1,2,4-Trimethylbenzene	4700	300	12 (0.1)	0.72 (0.21)	0.024 (0.0036)	0.13 J (0.26)	0.0022 J (0.0042)	0.99 (0.24)	0.00051 J (0.0026)	0.0014 J (0.0029)	0.0058 (0.0036)
1,3,5-Trimethylbenzene	4700	93	13 (0.1)	0.74 (0.21)	0.013 (0.0036)	0.079 J (0.26)	0.0011 J (0.0042)	0.31 (0.24)	ND (0.0026)	0.00048 J (0.0029)	0.0027 J (0.0036)
Xylenes (total)	7900	1000	21 (0.052)	1.6 (0.11)	0.044 (0.0018)	0.27 J (0.13)	0.0014 J (0.0021)	1.6 (0.12)	0.001 J (0.0013)	0.0028 J (0.0014)	0.009 J (0.0018)
Semivolatile Organic Compounds											
Anthracene	190000	350	ND (0.54)	0.12 J (0.14)	16 (0.29)	1.6 (0.85)	0.085 J (0.18)	0.96 (0.16)	0.14 J (0.15)	0.23 (0.14)	0.22 (0.17)
Benzo(a)anthracene	130	340	ND (0.54)	0.28 (0.14)	55 (2.9)	8.9 (0.85)	0.22 (0.18)	1.1 (0.16)	0.38 (0.15)	0.44 (0.14)	0.29 (0.17)
Benzo(a)pyrene	91	46	ND (0.72)	0.46 (0.19)	59 (3.9)	15 (1.1)	0.24 (0.24)	1.8 (0.21)	0.59 (0.2)	0.51 (0.19)	0.34 (0.22)
Benzo(b)fluoranthene	76	170	ND (0.54)	0.43 (0.14)	56 (2.9)	15 (0.85)	0.24 (0.18)	1.9 (0.16)	0.66 (0.15)	0.54 (0.14)	0.31 (0.17)
Benzo(g,h,i)perylene	190000	180	ND (0.72)	0.21 (0.19)	45 (3.9)	8.2 (1.1)	0.11 J (0.24)	1.4 (0.21)	0.28 (0.2)	0.32 (0.19)	0.2 J (0.22)
Chrysene	760	230	0.1 J (0.54)	0.37 (0.14)	60 (2.9)	11 (0.85)	0.22 (0.18)	1.2 (0.16)	0.37 (0.15)	0.46 (0.14)	0.33 (0.17)
Fluorene	130000	3800	ND (0.91)	0.08 J (0.24)	18 (0.48)	0.6 J (1.4)	0.091 J (0.3)	0.68 (0.26)	0.05 J (0.25)	0.18 J (0.24)	0.18 J (0.28)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.18)	0.76 (0.048)	6.4 (0.48)	4.3 (0.28)	0.27 (0.06)	8 (0.26)	0.5 (0.049)	0.84 (0.048)	0.67 (0.056)
Phenanthrene	190000	10000	ND (0.54)	0.34 (0.14)	150 (2.9)	2.1 (0.85)	0.36 (0.18)	2.6 (0.16)	0.32 (0.15)	0.85 (0.14)	0.73 (0.17)
Pyrene	96000	2200	ND (0.54)	0.41 (0.14)	160 (2.9)	11 (0.85)	0.4 (0.18)	1.7 (0.16)	0.48 (0.15)	0.9 (0.14)	0.59 (0.17)
Metals											
Lead	1000	450	87.9 (2.21)	205 (2.82)	284 (2.91)	307 (3.45)	254 (3.55)	383 (2.95)	88.1 (3.05)	359 (2.86)	280 (3.32)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR276-19	GPR276-19	GPR276-19	GPR276-20	GPR276-20	GPR276-21	GPR276-21	GPR281-01	GPR281-07
Field Sample ID			GPR276-19-0.5-1.0	GPR276-19-6.5-7.0	GPR276-19-9.5-10.0	GPR276-20-0.5-1.0	GPR276-20-3.0-3.5	GPR276-21-0.5-1.0	GPR276-21-2.5-3.0	GPR281-01-SS01	GPR281-07-SS01
Collection Depth (ft bgs)			0.5 - 1.0	6.5 - 7.0	9.5 - 10.0	0.5 - 1.0	3.0 - 3.5	0.5 - 1.0	2.5 - 3.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			11/30/2023	11/30/2023	11/30/2023	11/30/2023	11/30/2023	11/30/2023	11/30/2023	12/6/2022	12/6/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00066)	ND (0.00086)	ND (0.00091)	0.00017 J (0.00052)	5.2 (0.55)	0.00049 (0.00048)	1.1 (0.26)	ND (0.0008)	ND (0.0004)
Cumene	10000	2500	ND (0.0013)	0.0016 J (0.0017)	0.015 (0.0018)	0.00033 J (0.001)	22 (1.1)	0.00093 J (0.00095)	17 (0.51)	ND (0.0016)	0.00015 J (0.00081)
1,2-Dibromoethane	3.7	0.005	ND (0.00066)	ND (0.00086)	ND (0.00091)	ND (0.00052)	ND (0.55)	ND (0.00048)	ND (0.26)	ND (0.0008)	ND (0.0004)
1,2-Dichloroethane	85	0.5	ND (0.0013)	ND (0.0017)	ND (0.0018)	ND (0.001)	ND (1.1)	ND (0.00095)	ND (0.51)	ND (0.0016)	ND (0.00081)
Ethyl Benzene	880	70	ND (0.0013)	0.00028 J (0.0017)	0.00035 J (0.0018)	ND (0.001)	7.8 (1.1)	0.00031 J (0.00095)	6.5 (0.51)	ND (0.0016)	ND (0.00081)
Methyl tert-butyl ether	8500	2	ND (0.0026)	ND (0.0034)	ND (0.0036)	ND (0.0021)	ND (2.2)	ND (0.0019)	ND (1)	ND (0.0032)	ND (0.0016)
Toluene	10000	100	ND (0.0013)	ND (0.0017)	ND (0.0018)	ND (0.001)	9.1 (1.1)	ND (0.00095)	3.1 (0.51)	ND (0.0016)	ND (0.00081)
1,2,4-Trimethylbenzene	4700	300	ND (0.0026)	0.0032 J (0.0034)	0.0025 J (0.0036)	ND (0.0021)	20 (2.2)	0.00049 J (0.0019)	7 (1)	0.0014 J (0.0032)	0.0024 (0.0016)
1,3,5-Trimethylbenzene	4700	93	ND (0.0026)	0.001 J (0.0034)	0.002 J (0.0036)	ND (0.0021)	110 (2.2)	0.00034 J (0.0019)	12 (1)	0.00052 J (0.0032)	ND (0.0016)
Xylenes (total)	7900	1000	ND (0.0013)	0.0059 J (0.0017)	0.0025 J (0.0018)	ND (0.001)	21 (1.1)	0.00062 J (0.00095)	12 (0.51)	ND (0.0016)	0.00084 (0.00081)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.4 (0.14)	0.32 (0.14)	0.45 (0.18)	ND (0.12)	0.23 (0.15)	0.4 (0.12)	0.39 (0.14)	0.23 (0.14)	0.061 J (0.11)
Benzo(a)anthracene	130	340	0.97 (0.14)	0.75 (0.14)	0.78 (0.18)	0.033 J (0.12)	0.47 (0.15)	2 (0.12)	1.6 (0.14)	0.24 (0.14)	0.19 (0.11)
Benzo(a)pyrene	91	46	0.96 (0.19)	1 (0.19)	0.8 (0.25)	ND (0.16)	0.94 (0.2)	2 (0.16)	2.6 (0.18)	0.3 (0.19)	0.061 J (0.15)
Benzo(b)fluoranthene	76	170	1.2 (0.14)	1 (0.14)	0.77 (0.18)	ND (0.12)	1 (0.15)	2.8 (0.12)	2.8 (0.14)	0.34 (0.14)	0.12 (0.11)
Benzo(g,h,i)perylene	190000	180	0.49 (0.19)	0.65 (0.19)	0.35 (0.25)	ND (0.16)	0.77 (0.2)	1.2 (0.16)	1.7 (0.18)	0.19 (0.19)	0.044 J (0.15)
Chrysene	760	230	0.92 (0.14)	0.79 (0.14)	0.79 (0.18)	0.032 J (0.12)	0.55 (0.15)	2.4 (0.12)	1.7 (0.14)	0.26 (0.14)	0.55 (0.11)
Fluorene	130000	3800	0.18 J (0.24)	0.17 J (0.24)	0.5 (0.31)	ND (0.2)	0.13 J (0.25)	0.18 J (0.21)	0.23 (0.23)	0.2 J (0.24)	0.14 J (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.38 (0.048)	3.3 (0.047)	0.58 (0.062)	0.054 (0.041)	2.1 (0.05)	0.21 (0.041)	2.6 (0.046)	4.5 (0.24)	0.032 J (0.19)
Phenanthrene	190000	10000	1.5 (0.14)	0.82 (0.14)	1.8 (0.18)	0.061 J (0.12)	0.47 (0.15)	2.9 (0.12)	1.3 (0.14)	0.71 (0.14)	0.33 (0.11)
Pyrene	96000	2200	1.6 (0.14)	0.97 (0.14)	1.4 (0.18)	0.063 J (0.12)	0.51 (0.15)	3.6 (0.12)	2.1 (0.14)	0.32 (0.14)	0.38 (0.11)
Metals											
Lead	1000	450	315 (2.86)	280 (2.86)	157 (3.7)	8.29 (2.39)	181 (2.93)	82.4 (2.44)	71.1 (2.78)	284 (2.8)	33.7 (2.22)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR281-08	GPR281-10	GPR281-11	GPR281-12	GPR281-13	GPR281-14	GPR282-01	GPR282-03	GPR282-05
Field Sample ID			GPR281-08-SS01	GPR281-10-SS01	GPR281-11-SS01	GPR281-12-SS01	GPR281-13-3.5-4.0	GPR281-14-4.5-5.0	GPR282-01-SS01	GPR282-03-SS01	GPR282-05-SS01
Collection Depth (ft bgs)			4.5 - 5.0	3.5 - 4.0	4.5 - 5.0	4.5 - 5.0	3.5 - 4.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.0 - 4.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/1/2023	12/4/2023	12/6/2022	12/6/2022	12/6/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00075)	ND (0.0011)	0.00037 J (0.00064)	0.00036 J (0.00054)	ND (0.00079)	ND (0.00087)	ND (0.00065)	ND (0.00057)	ND (0.0009)
Cumene	10000	2500	ND (0.0015)	ND (0.0022)	ND (0.0013)	ND (0.0011)	ND (0.0016)	0.00019 J (0.0017)	ND (0.0013)	0.0013 (0.0011)	ND (0.0018)
1,2-Dibromoethane	3.7	0.005	ND (0.00075)	ND (0.0011)	ND (0.00064)	ND (0.00054)	ND (0.00079)	ND (0.00087)	ND (0.00065)	ND (0.00057)	ND (0.0009)
1,2-Dichloroethane	85	0.5	ND (0.0015)	ND (0.0022)	ND (0.0013)	ND (0.0011)	ND (0.0016)	ND (0.0017)	ND (0.0013)	ND (0.0011)	ND (0.0018)
Ethyl Benzene	880	70	ND (0.0015)	ND (0.0022)	0.00021 J (0.0013)	0.00016 J (0.0011)	ND (0.0016)	ND (0.0017)	ND (0.0013)	ND (0.0011)	ND (0.0018)
Methyl tert-butyl ether	8500	2	ND (0.003)	ND (0.0044)	ND (0.0026)	ND (0.0022)	ND (0.0031)	ND (0.0035)	ND (0.0026)	ND (0.0023)	ND (0.0036)
Toluene	10000	100	ND (0.0015)	ND (0.0022)	ND (0.0013)	ND (0.0011)	ND (0.0016)	ND (0.0017)	ND (0.0013)	ND (0.0011)	ND (0.0018)
1,2,4-Trimethylbenzene	4700	300	0.00067 J (0.003)	0.00085 J (0.0044)	0.0012 J (0.0026)	0.00038 J (0.0022)	ND (0.0031)	0.00095 J (0.0035)	0.00053 J (0.0026)	0.00085 J (0.0023)	ND (0.0036)
1,3,5-Trimethylbenzene	4700	93	ND (0.003)	ND (0.0044)	0.00045 J (0.0026)	ND (0.0022)	0.00038 J (0.0031)	0.00049 J (0.0035)	0.00028 J (0.0026)	0.00027 J (0.0023)	ND (0.0036)
Xylenes (total)	7900	1000	ND (0.0015)	ND (0.0022)	0.0018 J (0.0013)	ND (0.0011)	ND (0.0016)	0.0006 J (0.0017)	ND (0.0013)	0.00045 J (0.0011)	ND (0.0018)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.24 (0.14)	0.79 (0.15)	0.042 J (0.11)	ND (0.56)	0.22 (0.15)	0.33 (0.16)	1.3 (0.12)	0.34 (0.12)	0.99 (0.16)
Benzo(a)anthracene	130	340	0.42 (0.14)	1.9 (0.15)	0.11 (0.11)	0.26 J (0.56)	0.66 (0.15)	0.62 (0.16)	2.2 (0.12)	0.3 (0.12)	2.1 (0.16)
Benzo(a)pyrene	91	46	0.51 (0.19)	1.9 (0.2)	0.1 J (0.15)	ND (0.74)	0.83 (0.2)	0.8 (0.21)	1.8 (0.17)	0.44 (0.16)	1.5 (0.22)
Benzo(b)fluoranthene	76	170	0.58 (0.14)	2 (0.15)	0.17 (0.11)	0.19 J (0.56)	0.92 (0.15)	0.83 (0.16)	2.2 (0.12)	0.38 (0.12)	1.6 (0.16)
Benzo(g,h,i)perylene	190000	180	0.32 (0.19)	1 (0.2)	0.086 J (0.15)	0.11 J (0.74)	0.5 (0.2)	0.48 (0.21)	1 (0.17)	0.5 (0.16)	0.88 (0.22)
Chrysene	760	230	0.47 (0.14)	1.9 (0.15)	0.36 (0.11)	0.64 (0.56)	0.65 (0.15)	0.62 (0.16)	1.8 (0.12)	0.47 (0.12)	1.8 (0.16)
Fluorene	130000	3800	0.21 J (0.24)	0.52 (0.25)	0.051 J (0.18)	0.092 J (0.93)	0.11 J (0.26)	0.22 J (0.26)	0.69 (0.21)	0.19 J (0.2)	0.37 (0.28)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	4.4 (0.24)	4.9 (0.25)	0.068 J (0.18)	ND (0.93)	2.6 (0.051)	3.8 (0.052)	3.4 (0.21)	2.5 (0.2)	0.86 (0.28)
Phenanthrene	190000	10000	0.7 (0.14)	2.4 (0.15)	0.16 (0.11)	0.3 J (0.56)	0.47 (0.15)	0.85 (0.16)	4.3 (0.12)	0.82 (0.12)	2.8 (0.16)
Pyrene	96000	2200	0.55 (0.14)	2.8 (0.15)	0.32 (0.11)	0.54 J (0.56)	0.62 (0.15)	0.78 (0.16)	3.8 (0.12)	0.44 (0.12)	3 (0.16)
Metals											
Lead	1000	450	206 (2.79)	363 (2.98)	24.4 (2.24)	162 (11.2)	445 (3.03)	340 (3.04)	1520 (2.42)	184 (2.44)	412 (3.28)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR282-07	GPR282-08	GPR282-10	GPR282-12	GPR282-13	GPR284-01	GPR284-03	GPR284-05	GPR284-07
Field Sample ID			GPR282-07-SS01	GPR282-08-SS01	GPR282-10-SS01	GPR282-12-SS01	GPR282-13-3.0-3.5	GPR284-01-SS01	GPR284-03-SS01	GPR284-05-SS01	GPR284-07-SS01
Collection Depth (ft bgs)			4.0 - 4.5	4.5 - 5.0	3.0 - 3.5	4.0 - 4.5	3.0 - 3.5	2.5 - 3.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/1/2023	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00082)	ND (0.00098)	0.094 (0.076)	ND (0.00066)	ND (0.00063)	ND (0.00078)	ND (0.00068)	0.023 J (0.029)	ND (0.00077)
Cumene	10000	2500	ND (0.0016)	0.0017 J (0.002)	0.072 J (0.15)	ND (0.0013)	0.00032 J (0.0012)	ND (0.0016)	ND (0.0014)	0.081 (0.058)	0.0026 (0.0015)
1,2-Dibromoethane	3.7	0.005	ND (0.00082)	ND (0.00098)	ND (0.076)	ND (0.00066)	ND (0.00063)	ND (0.00078)	ND (0.00068)	ND (0.029)	ND (0.00077)
1,2-Dichloroethane	85	0.5	ND (0.0016)	ND (0.002)	ND (0.15)	ND (0.0013)	ND (0.0012)	ND (0.0016)	ND (0.0014)	ND (0.058)	ND (0.0015)
Ethyl Benzene	880	70	ND (0.0016)	0.00029 J (0.002)	0.11 J (0.15)	ND (0.0013)	ND (0.0012)	ND (0.0016)	ND (0.0014)	0.087 (0.058)	0.00047 J (0.0015)
Methyl tert-butyl ether	8500	2	0.0009 J (0.0033)	ND (0.0039)	ND (0.3)	ND (0.0026)	ND (0.0025)	ND (0.0031)	ND (0.0027)	ND (0.12)	ND (0.0031)
Toluene	10000	100	ND (0.0016)	ND (0.002)	0.44 (0.15)	ND (0.0013)	ND (0.0012)	ND (0.0016)	ND (0.0014)	ND (0.058)	ND (0.0015)
1,2,4-Trimethylbenzene	4700	300	ND (0.0033)	0.0057 (0.0039)	0.22 J (0.3)	ND (0.0026)	0.00085 J (0.0025)	ND (0.0031)	ND (0.0027)	0.75 (0.12)	0.00084 J (0.0031)
1,3,5-Trimethylbenzene	4700	93	ND (0.0033)	0.0014 J (0.0039)	0.11 J (0.3)	0.00028 J (0.0026)	ND (0.0025)	ND (0.0031)	ND (0.0027)	0.54 (0.12)	0.00054 J (0.0031)
Xylenes (total)	7900	1000	ND (0.0016)	0.0055 J (0.002)	0.42 J (0.15)	ND (0.0013)	0.00075 J (0.0012)	ND (0.0016)	ND (0.0014)	0.3 (0.058)	0.0011 J (0.0015)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.52 (0.15)	1.5 (0.16)	9.6 (1.6)	0.85 (0.35)	0.51 (0.26)	0.39 (0.13)	0.58 (0.14)	0.18 (0.11)	ND (0.66)
Benzo(a)anthracene	130	340	0.96 (0.15)	2 (0.16)	13 (1.6)	0.5 (0.35)	0.78 (0.26)	1.5 (0.13)	1.8 (0.14)	0.41 (0.11)	0.37 J (0.66)
Benzo(a)pyrene	91	46	1.2 (0.2)	2 (0.22)	12 (2.1)	0.52 (0.46)	1.2 (0.35)	1.4 (0.18)	2 (0.18)	0.32 (0.15)	0.29 J (0.88)
Benzo(b)fluoranthene	76	170	1.3 (0.15)	2.2 (0.16)	14 (1.6)	0.58 (0.35)	1.2 (0.26)	1.6 (0.13)	2.2 (0.14)	0.45 (0.11)	0.38 J (0.66)
Benzo(g,h,i)perylene	190000	180	0.71 (0.2)	1.3 (0.22)	5.9 (2.1)	0.59 (0.46)	0.48 (0.35)	0.64 (0.18)	1.2 (0.18)	0.25 (0.15)	0.36 J (0.88)
Chrysene	760	230	1 (0.15)	2.2 (0.16)	12 (1.6)	0.53 (0.35)	1.1 (0.26)	1.3 (0.13)	1.7 (0.14)	1.1 (0.11)	0.56 J (0.66)
Fluorene	130000	3800	0.38 (0.26)	1.5 (0.27)	8.2 (2.6)	0.67 (0.58)	0.29 J (0.44)	0.35 (0.22)	0.45 (0.23)	0.35 (0.18)	ND (1.1)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	3.2 (0.26)	7.7 (0.27)	5.3 (2.6)	9.6 (0.58)	1.4 (0.088)	3.2 (0.22)	4.9 (0.23)	0.65 (0.18)	0.93 J (1.1)
Phenanthrene	190000	10000	1.7 (0.15)	4.5 (0.16)	28 (1.6)	2.4 (0.35)	1.4 (0.26)	1 (0.13)	1.4 (0.14)	1 (0.11)	0.62 J (0.66)
Pyrene	96000	2200	1.6 (0.15)	4.4 (0.16)	26 (1.6)	0.81 (0.35)	1.5 (0.26)	1.9 (0.13)	2 (0.14)	0.91 (0.11)	0.42 J (0.66)
Metals											
Lead	1000	450	493 (3.06)	343 (3.21)	411 (3.09)	295 (2.46)	438 (2.62)	112 (2.64)	63.3 (2.62)	125 (2.26)	186 (2.59)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR284-08	GPR284-09	GPR284-10	GPR284-10	GPR284-11	GPR284-13	GPR284-14	GPR284-15R	GPR284-15
Field Sample ID			GPR284-08-SS01	GPR284-09-SS01	GPR284-10-SS01	DUP-52	GPR284-11-SS01	GPR284-13-SS01	GPR284-14-SS01	TG06-MW03-0.5-1.0	GPR284-15-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.0 - 4.5	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	0.5 - 1.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022	12/1/2023	12/6/2022
Comments						Field Duplicate					
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.0005)	ND (0.00066)	ND (0.00054)	ND (0.0012)	ND (0.00072)	ND (0.00082)	ND (0.00051)	ND (0.00047)	0.0002 J (0.00053)
Cumene	10000	2500	ND (0.001)	0.0013 (0.0013)	0.00096 J (0.0011)	ND (0.0023)	ND (0.0014)	ND (0.0016)	ND (0.001)	ND (0.00095)	ND (0.001)
1,2-Dibromoethane	3.7	0.005	ND (0.0005)	ND (0.00066)	ND (0.00054)	ND (0.0012)	ND (0.00072)	ND (0.00082)	ND (0.00051)	ND (0.00047)	ND (0.00053)
1,2-Dichloroethane	85	0.5	ND (0.001)	ND (0.0013)	ND (0.0011)	ND (0.0023)	ND (0.0014)	ND (0.0016)	ND (0.001)	ND (0.00095)	ND (0.001)
Ethyl Benzene	880	70	ND (0.001)	ND (0.0013)	ND (0.0011)	ND (0.0023)	ND (0.0014)	ND (0.0016)	ND (0.001)	0.00018 J (0.00095)	ND (0.001)
Methyl tert-butyl ether	8500	2	ND (0.002)	ND (0.0026)	ND (0.0022)	ND (0.0046)	ND (0.0029)	ND (0.0033)	ND (0.002)	ND (0.0019)	ND (0.0021)
Toluene	10000	100	ND (0.001)	ND (0.0013)	ND (0.0011)	ND (0.0023)	ND (0.0014)	ND (0.0016)	ND (0.001)	ND (0.00095)	ND (0.001)
1,2,4-Trimethylbenzene	4700	300	ND (0.002)	ND (0.0026)	0.00059 J (0.0022)	ND (0.0046)	ND (0.0029)	ND (0.0033)	ND (0.002)	0.0006 J (0.0019)	ND (0.0021)
1,3,5-Trimethylbenzene	4700	93	ND (0.002)	ND (0.0026)	ND (0.0022)	ND (0.0046)	ND (0.0029)	ND (0.0033)	ND (0.002)	0.00019 J (0.0019)	ND (0.0021)
Xylenes (total)	7900	1000	ND (0.001)	0.0024 J (0.0013)	0.002 J (0.0011)	ND (0.0023)	0.00099 J (0.0014)	0.0011 J (0.0016)	0.00076 J (0.001)	0.0013 J (0.00095)	ND (0.001)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.25 (0.12)	0.78 (0.14)	0.72 (0.12)	0.64 (0.14)	0.66 (0.14)	2.7 (0.87)	0.57 (0.11)	0.93 (0.12)	0.52 (0.11)
Benzo(a)anthracene	130	340	1.2 (0.12)	2.8 (0.14)	2.8 (0.12)	2.9 (0.14)	3.4 (0.14)	20 (0.87)	2.5 (0.11)	2.3 (0.12)	2.4 (0.11)
Benzo(a)pyrene	91	46	1.1 (0.16)	3 (0.18)	2.8 (0.16)	3.3 (0.19)	3.2 (0.19)	17 (1.2)	2.3 (0.15)	2 (0.16)	2 (0.15)
Benzo(b)fluoranthene	76	170	1.2 (0.12)	3.5 (0.14)	3.1 (0.12)	3.6 (0.14)	3.8 (0.14)	19 (0.87)	2.7 (0.11)	2.2 (0.12)	2.7 (0.11)
Benzo(g,h,i)perylene	190000	180	0.48 (0.16)	1.4 (0.18)	1.3 (0.16)	1.5 (0.19)	1.6 (0.19)	6.6 (1.2)	1.2 (0.15)	0.89 (0.16)	1.1 (0.15)
Chrysene	760	230	1 (0.12)	2.5 (0.14)	2.4 (0.12)	2.7 (0.14)	3 (0.14)	17 (0.87)	2.4 (0.11)	2.5 (0.12)	2.4 (0.11)
Fluorene	130000	3800	0.25 (0.2)	0.69 (0.23)	0.45 (0.2)	0.56 (0.23)	0.26 (0.24)	0.98 J (1.4)	0.65 (0.19)	0.48 (0.2)	0.038 J (0.19)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.92 (0.2)	5.2 (0.23)	4.2 (0.2)	4.1 (0.23)	3.3 (0.24)	6.7 (1.4)	2.8 (0.19)	0.73 (0.04)	0.049 J (0.19)
Phenanthrene	190000	10000	0.47 (0.12)	2.3 (0.14)	2.3 (0.12)	1.5 (0.14)	1.7 (0.14)	4.7 (0.87)	2.7 (0.11)	0.74 (0.12)	2 (0.11)
Pyrene	96000	2200	1.2 (0.12)	3.2 (0.14)	3.3 (0.12)	3.2 (0.14)	3.8 (0.14)	23 (0.87)	3.3 (0.11)	2.5 (0.12)	3.3 (0.11)
Metals											
Lead	1000	450	92.5 (2.29)	89.5 (2.71)	95.3 (2.33)	69.8 (2.72)	59.1 (2.8)	87.6 (3.38)	30.1 (2.16)	221 (2.39)	5090 (2.22)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR284-15R	GPR284-15R	GPR284-16	GPR284-16	GPR284-16	GPR284-17	GPR285-01	GPR285-02	GPR285-03
Field Sample ID			TG06-MW03-9.0-9.5	TG06-MW03-9.5-10.0	GPR284-16-0.5-1.0	GPR284-16-7.5-8.0	GPR284-16-9.5-10.0	GPR284-17-2.5-3.0	GPR285-01-SS01	GPR285-02-SS01	GPR285-03-SS01
Collection Depth (ft bgs)			9.0 - 9.5	9.5 - 10.0	0.5 - 1.0	7.5 - 8.0	9.5 - 10.0	2.5 - 3.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/1/2023	12/1/2023	12/1/2023	12/1/2023	12/1/2023	12/1/2023	12/7/2022	12/7/2022	12/7/2022
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	ND (0.00082)	ND (0.00096)	ND (0.00071)	ND (0.00057)	ND (0.00081)	ND (0.00052)	4 (0.054)	0.00026 J (0.00078)	ND (0.00063)
Cumene	10000	2500	0.0048 (0.0016)	0.0046 (0.0019)	0.00029 J (0.0014)	0.002 (0.0011)	0.00041 J (0.0016)	ND (0.001)	4.1 (0.11)	0.00021 J (0.0016)	ND (0.0012)
1,2-Dibromoethane	3.7	0.005	ND (0.00082)	ND (0.00096)	ND (0.00071)	ND (0.00057)	ND (0.00081)	ND (0.00052)	ND (0.054)	ND (0.00078)	ND (0.00063)
1,2-Dichloroethane	85	0.5	ND (0.0016)	ND (0.0019)	ND (0.0014)	ND (0.0011)	ND (0.0016)	ND (0.001)	ND (0.11)	ND (0.0016)	ND (0.0012)
Ethyl Benzene	880	70	ND (0.0016)	0.00032 J (0.0019)	ND (0.0014)	ND (0.0011)	0.00027 J (0.0016)	ND (0.001)	7.4 (0.11)	0.00036 J (0.0016)	ND (0.0012)
Methyl tert-butyl ether	8500	2	ND (0.0033)	ND (0.0038)	ND (0.0028)	ND (0.0023)	ND (0.0032)	ND (0.0021)	ND (0.22)	ND (0.0031)	ND (0.0025)
Toluene	10000	100	ND (0.0016)	ND (0.0019)	ND (0.0014)	ND (0.0011)	ND (0.0016)	ND (0.001)	12 (0.11)	ND (0.0016)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	300	0.0013 J (0.0033)	0.0039 (0.0038)	ND (0.0028)	0.0015 J (0.0023)	0.0011 J (0.0032)	ND (0.0021)	28 (0.22)	0.00063 J (0.0031)	ND (0.0025)
1,3,5-Trimethylbenzene	4700	93	0.0008 J (0.0033)	0.0011 J (0.0038)	ND (0.0028)	0.00094 J (0.0023)	0.00046 J (0.0032)	ND (0.0021)	30 (0.22)	0.00077 J (0.0031)	ND (0.0025)
Xylenes (total)	7900	1000	0.0019 (0.0016)	0.0051 J (0.0019)	ND (0.0014)	0.0021 J (0.0011)	0.0011 J (0.0016)	ND (0.001)	27 (0.11)	ND (0.0016)	ND (0.0012)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.2 (0.15)	0.25 (0.18)	0.35 (0.12)	1.4 (0.12)	0.12 J (0.15)	0.36 (0.12)	0.71 (0.14)	0.7 (0.14)	0.68 (0.14)
Benzo(a)anthracene	130	340	0.47 (0.15)	0.37 (0.18)	1 (0.12)	5.8 (0.12)	0.24 (0.15)	1.2 (0.12)	1.4 (0.14)	2.2 (0.14)	1.2 (0.14)
Benzo(a)pyrene	91	46	0.59 (0.2)	0.45 (0.24)	0.95 (0.16)	5.3 (0.16)	0.3 (0.2)	1.6 (0.16)	2.3 (0.18)	3.2 (0.19)	1.8 (0.18)
Benzo(b)fluoranthene	76	170	0.57 (0.15)	0.45 (0.18)	0.99 (0.12)	5.3 (0.12)	0.33 (0.15)	1.6 (0.12)	2.5 (0.14)	3.5 (0.14)	2 (0.14)
Benzo(g,h,i)perylene	190000	180	0.35 (0.2)	0.28 (0.24)	0.5 (0.16)	2.3 (0.16)	0.18 J (0.2)	0.81 (0.16)	1.7 (0.18)	1.8 (0.19)	1.4 (0.18)
Chrysene	760	230	0.62 (0.15)	0.42 (0.18)	1 (0.12)	5.6 (0.12)	0.28 (0.15)	1.1 (0.12)	1.4 (0.14)	2 (0.14)	1.3 (0.14)
Fluorene	130000	3800	0.16 J (0.25)	0.18 J (0.31)	0.2 (0.2)	1.3 (0.2)	0.099 J (0.25)	0.11 J (0.2)	0.68 (0.23)	0.3 (0.24)	0.26 (0.23)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.99 (0.05)	1.1 (0.061)	0.53 (0.04)	2.4 (0.041)	0.82 (0.05)	0.74 (0.039)	11 (1.2)	6.1 (0.24)	4.1 (0.23)
Phenanthrene	190000	10000	0.6 (0.15)	0.88 (0.18)	1.2 (0.12)	4.7 (0.12)	0.42 (0.15)	0.77 (0.12)	2.1 (0.14)	1.7 (0.14)	1.6 (0.14)
Pyrene	96000	2200	0.88 (0.15)	0.85 (0.18)	1.4 (0.12)	7.8 (0.12)	0.53 (0.15)	1.3 (0.12)	1.6 (0.14)	2 (0.14)	1.6 (0.14)
Metals											
Lead	1000	450	176 (3)	459 (3.6)	339 (2.39)	84.2 (2.38)	317 (2.99)	96.8 (2.36)	255 (2.76)	80.6 (2.82)	296 (2.67)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR285-07R	GPR285-07R	GPR285-07	GPR285-07R	GPR285-07R	GPR285-08	GPR285-08	GPR285-09	GPR285-11
Field Sample ID			TG06-MW04-0.5-1.0	TG06-MW04-2.0-2.5	GPR285-07-SS01	TG06-MW04-5.0-5.5	TG06-MW04-9.5-10.0	GPR285-08-SS01	DUP-53	GPR285-09-2.0-2.5	GPR285-11-SS01
Collection Depth (ft bgs)			0.5 - 1.0	2.0 - 2.5	4.5 - 5.0	5.0 - 5.5	9.5 - 10.0	4.5 - 5.0	4.5 - 5.0	2.0 - 2.5	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			11/29/2023	11/29/2023	12/7/2022	11/29/2023	11/29/2023	12/7/2022	12/7/2022	11/29/2023	12/7/2022
Comments									Field Duplicate		
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.0016 (0.00057)	3.4 (2.1)	12 (0.22)	1.9 (0.056)	ND (0.00077)	ND (0.00082)	ND (0.00086)	ND (0.00074)	ND (0.0008)
Cumene	10000	2500	0.019 (0.0011)	930 (4.3)	18 (0.44)	20 (0.11)	0.0013 J (0.0015)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.0016)
1,2-Dibromoethane	3.7	0.005	ND (0.00057)	ND (2.1)	ND (0.22)	ND (0.056)	ND (0.00077)	ND (0.00082)	ND (0.00086)	ND (0.00074)	ND (0.0008)
1,2-Dichloroethane	85	0.5	ND (0.0011)	ND (4.3)	ND (0.44)	ND (0.11)	ND (0.0015)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.0016)
Ethyl Benzene	880	70	0.0021 (0.0011)	89 (4.3)	51 (0.44)	3.4 (0.11)	ND (0.0015)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.0016)
Methyl tert-butyl ether	8500	2	ND (0.0023)	ND (8.5)	ND (0.88)	ND (0.22)	0.0018 J (0.0031)	ND (0.0033)	ND (0.0035)	ND (0.0029)	ND (0.0032)
Toluene	10000	100	ND (0.0011)	5.1 (4.3)	17 (0.44)	4 (0.11)	ND (0.0015)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.0016)
1,2,4-Trimethylbenzene	4700	300	0.016 (0.0023)	1800 (17)	210 (3.5)	14 (0.22)	0.0042 (0.0031)	ND (0.0033)	ND (0.0035)	ND (0.0029)	ND (0.0032)
1,3,5-Trimethylbenzene	4700	93	0.012 (0.0023)	610 (8.5)	120 (0.88)	7.8 (0.22)	0.0012 J (0.0031)	ND (0.0033)	ND (0.0035)	ND (0.0029)	ND (0.0032)
Xylenes (total)	7900	1000	0.0024 J (0.0011)	42 J (4.3)	94 (0.44)	8.5 (0.11)	0.0059 J (0.0015)	ND (0.0016)	ND (0.0017)	ND (0.0015)	ND (0.0016)
Semivolatile Organic Compounds											
Anthracene	190000	350	0.53 (0.12)	0.81 (0.13)	0.59 (0.14)	0.2 (0.15)	0.41 (0.16)	0.5 (0.14)	0.8 (0.14)	0.36 (0.14)	0.77 (0.14)
Benzo(a)anthracene	130	340	1.4 (0.12)	1.4 (0.13)	0.41 (0.14)	0.38 (0.15)	0.53 (0.16)	1.2 (0.14)	1.9 (0.14)	1.5 (0.14)	1.6 (0.14)
Benzo(a)pyrene	91	46	1.3 (0.16)	1.7 (0.18)	0.4 (0.19)	0.64 (0.2)	0.67 (0.22)	1.8 (0.18)	2.7 (0.19)	1.9 (0.19)	1.9 (0.19)
Benzo(b)fluoranthene	76	170	1.5 (0.12)	2.1 (0.13)	0.59 (0.14)	0.73 (0.15)	0.63 (0.16)	1.8 (0.14)	3 (0.14)	2.1 (0.14)	2 (0.14)
Benzo(g,h,i)perylene	190000	180	0.69 (0.16)	1.3 (0.18)	0.33 (0.19)	0.46 (0.2)	0.36 (0.22)	1 (0.18)	1.6 (0.19)	1 (0.19)	1.2 (0.19)
Chrysene	760	230	1.3 (0.12)	1.5 (0.13)	0.47 (0.14)	0.43 (0.15)	0.65 (0.16)	1.2 (0.14)	1.8 (0.14)	1.4 (0.14)	1.4 (0.14)
Fluorene	130000	3800	0.25 (0.2)	1.4 (0.22)	0.81 (0.24)	0.18 J (0.25)	0.31 (0.27)	0.38 (0.23)	0.41 (0.24)	0.2 J (0.24)	0.4 (0.24)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	1.2 (0.041)	52 (0.45)	15 (1.2)	2.8 (0.051)	2.4 (0.054)	7 (0.23)	6.9 (0.24)	3 (0.048)	7.6 (0.24)
Phenanthrene	190000	10000	1.5 (0.12)	3.4 (0.13)	2.7 (0.14)	0.65 (0.15)	1.2 (0.16)	1.5 (0.14)	2 (0.14)	1.2 (0.14)	2.5 (0.14)
Pyrene	96000	2200	2.1 (0.12)	2.2 (0.13)	0.83 (0.14)	0.53 (0.15)	1.2 (0.16)	1.2 (0.14)	1.4 (0.14)	1.7 (0.14)	2 (0.14)
Metals											
Lead	1000	450	108 (2.43)	191 (2.67)	287 (2.8)	225 (3)	291 (3.22)	160 (2.76)	212 (2.83)	190 (2.87)	113 (2.84)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR285-13	GPR285-14	GPR285-14	GPR285-14	GPR285-15	GPR285-15	GPR285-15	GPR285-16	GPR285-17
Field Sample ID			GPR285-13-SS01	GPR285-14-0.5-1.0	GPR285-14-5.0-5.5	GPR285-14-6.0-6.5	GPR285-15-0.5-1.0	GPR285-15-6.0-6.5	GPR285-15-6.5-7.0	GPR285-16-3.0-3.5	GPR285-17-3.0-3.5
Collection Depth (ft bgs)			4.5 - 5.0	0.5 - 1.0	5.0 - 5.5	6.0 - 6.5	0.5 - 1.0	6.0 - 6.5	6.5 - 7.0	3.0 - 3.5	3.0 - 3.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/7/2022	11/29/2023	11/29/2023	11/29/2023	11/29/2023	11/29/2023	11/29/2023	11/29/2023	11/29/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	1.1 (0.11)	0.00041 J (0.00072)	0.0057 (0.00083)	ND (0.00093)	ND (0.00087)	ND (0.00063)	ND (0.00082)	ND (0.00047)	ND (0.00083)
Cumene	10000	2500	12 (0.21)	ND (0.0014)	ND (0.0016)	0.00045 J (0.0019)	0.00054 J (0.0017)	0.00077 J (0.0013)	0.0053 (0.0016)	ND (0.00094)	ND (0.0016)
1,2-Dibromoethane	3.7	0.005	ND (0.11)	ND (0.00072)	ND (0.00083)	ND (0.00093)	ND (0.00087)	ND (0.00063)	ND (0.00082)	ND (0.00047)	ND (0.00083)
1,2-Dichloroethane	85	0.5	ND (0.21)	ND (0.0014)	ND (0.0016)	ND (0.0019)	ND (0.0017)	ND (0.0013)	ND (0.0016)	ND (0.00094)	ND (0.0016)
Ethyl Benzene	880	70	23 (0.21)	ND (0.0014)	ND (0.0016)	ND (0.0019)	ND (0.0017)	ND (0.0013)	0.00035 J (0.0016)	ND (0.00094)	ND (0.0016)
Methyl tert-butyl ether	8500	2	ND (0.42)	ND (0.0029)	ND (0.0033)	ND (0.0037)	ND (0.0035)	ND (0.0025)	ND (0.0033)	ND (0.0019)	ND (0.0033)
Toluene	10000	100	6.9 (0.21)	ND (0.0014)	ND (0.0016)	ND (0.0019)	ND (0.0017)	ND (0.0013)	0.00094 J (0.0016)	ND (0.00094)	ND (0.0016)
1,2,4-Trimethylbenzene	4700	300	80 (4.2)	ND (0.0029)	ND (0.0033)	0.00081 J (0.0037)	ND (0.0035)	0.00062 J (0.0025)	0.0037 (0.0033)	ND (0.0019)	ND (0.0033)
1,3,5-Trimethylbenzene	4700	93	80 (4.2)	ND (0.0029)	ND (0.0033)	ND (0.0037)	ND (0.0035)	0.00033 J (0.0025)	0.0014 J (0.0033)	ND (0.0019)	ND (0.0033)
Xylenes (total)	7900	1000	39 (0.21)	ND (0.0014)	0.00049 J (0.0016)	0.0007 J (0.0019)	ND (0.0017)	0.00041 J (0.0013)	0.0044 J (0.0016)	ND (0.00094)	ND (0.0016)
Semivolatile Organic Compounds											
Anthracene	190000	350	2 (0.14)	0.87 (0.16)	0.64 (0.17)	0.53 (0.16)	0.12 J (0.16)	0.48 J (0.63)	0.47 (0.15)	ND (0.11)	0.79 (0.16)
Benzo(a)anthracene	130	340	4.9 (0.14)	2.7 (0.16)	3.2 (0.17)	0.89 (0.16)	0.35 (0.16)	1.4 (0.63)	0.81 (0.15)	0.077 J (0.11)	0.95 (0.16)
Benzo(a)pyrene	91	46	4.9 (0.19)	3.4 (0.22)	4.1 (0.23)	0.97 (0.21)	0.52 (0.21)	1.6 (0.84)	1 (0.2)	0.12 J (0.15)	1 (0.21)
Benzo(b)fluoranthene	76	170	5.8 (0.14)	3.8 (0.16)	4.4 (0.17)	1.1 (0.16)	0.53 (0.16)	1.7 (0.63)	1.1 (0.15)	0.13 (0.11)	1.1 (0.16)
Benzo(g,h,i)perylene	190000	180	4.5 (0.19)	1.7 (0.22)	2.1 (0.23)	0.56 (0.21)	0.26 (0.21)	0.78 J (0.84)	0.61 (0.2)	0.068 J (0.15)	0.53 (0.21)
Chrysene	760	230	4.4 (0.14)	3 (0.16)	3.3 (0.17)	1 (0.16)	0.36 (0.16)	1.4 (0.63)	0.94 (0.15)	0.081 J (0.11)	1 (0.16)
Fluorene	130000	3800	1.1 (0.23)	0.61 (0.27)	0.24 J (0.29)	0.64 (0.26)	0.13 J (0.27)	0.39 J (1)	0.55 (0.25)	ND (0.19)	1 (0.26)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	13 (1.2)	2.5 (0.055)	2.5 (0.058)	2.8 (0.053)	0.69 (0.053)	2.2 (0.21)	3.7 (0.05)	0.23 (0.037)	4.5 (0.053)
Phenanthrene	190000	10000	7.3 (0.14)	4.6 (0.16)	1.3 (0.17)	2.3 (0.16)	0.36 (0.16)	1.4 (0.63)	1.5 (0.15)	0.075 J (0.11)	3 (0.16)
Pyrene	96000	2200	6.8 (0.14)	4.2 (0.16)	3.6 (0.17)	2.1 (0.16)	0.42 (0.16)	2.1 (0.63)	1.8 (0.15)	0.1 J (0.11)	2.2 (0.16)
Metals											
Lead	1000	450	129 (2.78)	268 (3.11)	304 (3.46)	311 (3.12)	25.6 (3.12)	100 (2.43)	272 (3.02)	22.8 (2.23)	264 (3.14)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR286-01	GPR286-03	GPR286-05	GPR286-07	GPR286-08	GPR286-09	GPR286-11	GPR286-13	GPR286-14
Field Sample ID			GPR286-01-SS01	GPR286-03-SS01	GPR286-05-SS01	GPR286-07-SS01	GPR286-08-SS01	GPR286-09-3.0-3.5	GPR286-11-SS01	GPR286-13-SS01	GPR286-14-4.5-5.0
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	3.0 - 3.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/8/2022	12/8/2022	12/8/2022	12/8/2022	12/8/2022	11/30/2023	12/8/2022	12/8/2022	11/30/2023
Comments											
Physical Properties											
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
Benzene	280	0.5	0.066 (0.062)	ND (0.00086)	ND (0.00063)	ND (0.0007)	ND (0.00085)	0.14 (0.054)	ND (0.026)	ND (0.001)	ND (0.00062)
Cumene	10000	2500	11 (0.12)	0.00039 J (0.0017)	ND (0.0013)	ND (0.0014)	ND (0.0017)	1.1 (0.11)	0.57 (0.052)	ND (0.002)	ND (0.0012)
1,2-Dibromoethane	3.7	0.005	ND (0.062)	ND (0.00086)	ND (0.00063)	ND (0.0007)	ND (0.00085)	ND (0.054)	ND (0.026)	ND (0.001)	ND (0.00062)
1,2-Dichloroethane	85	0.5	ND (0.12)	ND (0.0017)	ND (0.0013)	ND (0.0014)	ND (0.0017)	ND (0.11)	ND (0.052)	ND (0.002)	ND (0.0012)
Ethyl Benzene	880	70	1.9 (0.12)	ND (0.0017)	ND (0.0013)	ND (0.0014)	ND (0.0017)	0.28 (0.11)	ND (0.052)	ND (0.002)	ND (0.0012)
Methyl tert-butyl ether	8500	2	ND (0.25)	ND (0.0034)	ND (0.0025)	ND (0.0028)	ND (0.0034)	ND (0.22)	ND (0.1)	ND (0.004)	ND (0.0025)
Toluene	10000	100	1.2 (0.12)	ND (0.0017)	ND (0.0013)	ND (0.0014)	ND (0.0017)	1 (0.11)	ND (0.052)	ND (0.002)	ND (0.0012)
1,2,4-Trimethylbenzene	4700	300	5.2 (0.25)	ND (0.0034)	ND (0.0025)	ND (0.0028)	ND (0.0034)	4.6 (0.22)	ND (0.1)	ND (0.004)	ND (0.0025)
1,3,5-Trimethylbenzene	4700	93	0.37 (0.25)	ND (0.0034)	ND (0.0025)	ND (0.0028)	ND (0.0034)	2.1 (0.22)	ND (0.1)	ND (0.004)	ND (0.0025)
Xylenes (total)	7900	1000	7.1 (0.12)	ND (0.0017)	ND (0.0013)	ND (0.0014)	ND (0.0017)	1.3 (0.11)	0.051 J (0.052)	ND (0.002)	ND (0.0012)
Semivolatile Organic Compounds											
Anthracene	190000	350	1.2 (0.14)	0.39 (0.15)	ND (0.11)	0.56 (0.14)	0.077 J (0.14)	0.28 (0.14)	0.094 J (0.11)	0.9 (0.16)	0.13 (0.13)
Benzo(a)anthracene	130	340	3.1 (0.14)	0.97 (0.15)	ND (0.11)	1.7 (0.14)	0.2 (0.14)	0.78 (0.14)	0.27 (0.11)	1.7 (0.16)	0.35 (0.13)
Benzo(a)pyrene	91	46	3.3 (0.19)	1.1 (0.2)	ND (0.15)	2 (0.18)	0.22 (0.19)	1.2 (0.19)	0.33 (0.15)	2.5 (0.21)	0.51 (0.18)
Benzo(b)fluoranthene	76	170	4.5 (0.14)	1.4 (0.15)	ND (0.11)	2.5 (0.14)	0.25 (0.14)	1.3 (0.14)	0.39 (0.11)	2.8 (0.16)	0.56 (0.13)
Benzo(g,h,i)perylene	190000	180	2.3 (0.19)	0.67 (0.2)	ND (0.15)	1.2 (0.18)	0.13 J (0.19)	0.82 (0.19)	0.21 (0.15)	1.9 (0.21)	0.33 (0.18)
Chrysene	760	230	3.3 (0.14)	0.95 (0.15)	ND (0.11)	1.8 (0.14)	0.2 (0.14)	0.8 (0.14)	0.29 (0.11)	1.8 (0.16)	0.36 (0.13)
Fluorene	130000	3800	1 (0.24)	0.27 (0.25)	ND (0.19)	0.36 (0.23)	0.054 J (0.24)	0.15 J (0.24)	0.071 J (0.18)	0.46 (0.26)	0.069 J (0.22)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	14 (1.2)	6.4 (0.25)	ND (0.19)	6 (0.23)	0.59 (0.24)	2.9 (0.048)	1.2 (0.18)	10 (0.26)	1.6 (0.044)
Phenanthrene	190000	10000	4.9 (0.14)	1.4 (0.15)	ND (0.11)	1.9 (0.14)	0.24 (0.14)	0.74 (0.14)	0.35 (0.11)	2.1 (0.16)	0.36 (0.13)
Pyrene	96000	2200	5.5 (0.14)	1.1 (0.15)	ND (0.11)	2.3 (0.14)	0.34 (0.14)	0.86 (0.14)	0.38 (0.11)	1.6 (0.16)	0.41 (0.13)
Metals											
Lead	1000	450	143 (2.8)	295 (2.94)	4.98 (2.26)	142 (2.66)	182 (2.88)	263 (2.88)	48.9 (2.19)	302 (3.13)	138 (2.57)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H1
Summary of BDH Soil Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR286-15	GPR286-16	GPR286-17	GPR286-18	GPR973-08	GPR973-09	GPR973-10	GPR973-11
Field Sample ID			GPR286-15-2.0-2.5	GPR286-16-SS01	GPR286-17-4.5-5.0	GPR286-18-3.0-3.5	GPR973-08-4.0-4.5	GPR973-09-3.0-3.5	GPR973-10-3.5-4.0	GPR973-11-3.0-3.5
Collection Depth (ft bgs)			2.0 - 2.5	4.0 - 4.5	4.5 - 5.0	3.0 - 3.5	4.0 - 4.5	3.0 - 3.5	3.5 - 4.0	3.0 - 3.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			11/30/2023	12/8/2022	11/30/2023	11/29/2023	12/4/2023	12/4/2023	12/4/2023	12/4/2023
Comments										
Physical Properties										
pH	--	--	NA	NA	NA	NA	8.51	8.66	11.5	12.1
Volatile Organic Compounds										
Benzene	280	0.5	0.00055 J (0.00074)	ND (0.001)	ND (0.00056)	0.00026 J (0.00055)	NA	NA	NA	NA
Cumene	10000	2500	0.0035 (0.0015)	ND (0.002)	ND (0.0011)	0.00029 J (0.0011)	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	ND (0.00074)	ND (0.001)	ND (0.00056)	ND (0.00055)	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.0015)	ND (0.002)	ND (0.0011)	ND (0.0011)	NA	NA	NA	NA
Ethyl Benzene	880	70	ND (0.0015)	ND (0.002)	ND (0.0011)	0.00017 J (0.0011)	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (0.003)	ND (0.004)	ND (0.0022)	ND (0.0022)	NA	NA	NA	NA
Toluene	10000	100	0.0008 J (0.0015)	ND (0.002)	ND (0.0011)	ND (0.0011)	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	0.00064 J (0.003)	ND (0.004)	ND (0.0022)	ND (0.0022)	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	0.00054 J (0.003)	ND (0.004)	ND (0.0022)	ND (0.0022)	NA	NA	NA	NA
Xylenes (total)	7900	1000	ND (0.0015)	ND (0.002)	ND (0.0011)	0.00087 J (0.0011)	NA	NA	NA	NA
Semivolatile Organic Compounds										
Anthracene	190000	350	0.23 (0.14)	ND (0.15)	0.15 (0.14)	0.24 (0.11)	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.78 (0.14)	0.036 J (0.15)	0.45 (0.14)	0.52 (0.11)	NA	NA	NA	NA
Benzo(a)pyrene	91	46	1.1 (0.19)	ND (0.2)	0.64 (0.19)	0.9 (0.15)	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	1.2 (0.14)	ND (0.15)	0.71 (0.14)	0.94 (0.11)	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.59 (0.19)	ND (0.2)	0.36 (0.19)	0.74 (0.15)	NA	NA	NA	NA
Chrysene	760	230	0.76 (0.14)	0.032 J (0.15)	0.46 (0.14)	0.65 (0.11)	NA	NA	NA	NA
Fluorene	130000	3800	0.14 J (0.24)	ND (0.24)	0.079 J (0.24)	0.12 J (0.19)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	2.3 (0.047)	ND (0.24)	2.1 (0.047)	3.2 (0.038)	NA	NA	NA	NA
Phenanthrene	190000	10000	0.65 (0.14)	0.031 J (0.15)	0.45 (0.14)	0.66 (0.11)	NA	NA	NA	NA
Pyrene	96000	2200	0.85 (0.14)	0.06 J (0.15)	0.55 (0.14)	0.64 (0.11)	NA	NA	NA	NA
Metals										
Lead	1000	450	216 (2.73)	7.52 (2.93)	252 (2.82)	49.2 (2.27)	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H2
Summary of BDH Soil QAQC Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	TB-221206	FB-221207-1	FB-221207-2	TB-221207	FB-221208-1	FB-221208-2	TB-221208	TB-221209-1	FB061623	FB062023	FB-231129	TB-231129	FB-231130
Matrix	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water
Sample Date	12/6/2022	12/7/2022	12/7/2022	12/7/2022	12/8/2022	12/8/2022	12/8/2022	12/9/2022	6/16/2023	6/20/2023	11/29/2023	11/29/2023	11/30/2023
Comments	Trip Blank	Field Blank	Field Blank	Trip Blank	Field Blank	Field Blank	Trip Blank	Trip Blank	Field Blank	Field Blank	Field Blank	Trip Blank	Field Blank
Physical Properties													
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds													
Anthracene	NA	ND (0.1)	ND (0.1)	NA	ND (0.1)	ND (0.1)	NA	NA	ND (0.1)	ND (0.1)	ND (0.1)	NA	ND (0.1)
Benzo(a)anthracene	NA	ND (0.05)	ND (0.05)	NA	ND (0.05)	ND (0.05)	NA	NA	ND (0.05)	ND (0.05)	ND (0.05)	NA	ND (0.05)
Fluorene	NA	ND (0.1)	ND (0.1)	NA	ND (0.1)	0.01 J (0.1)	NA	NA	ND (0.1)	ND (0.1)	ND (0.1)	NA	ND (0.1)
Naphthalene	NA	ND (0.1)	ND (0.1)	NA	ND (0.1)	ND (0.1)	NA	NA	ND (0.1)	ND (0.1)	0.06 J (0.1)	NA	ND (0.1)
Phenanthrene	NA	ND (0.05)	ND (0.05)	NA	ND (0.05)	ND (0.05)	NA	NA	ND (0.05)	ND (0.05)	ND (0.05)	NA	ND (0.05)
Metals													
Lead (Total)	NA	18.21 (1)	0.9214 J (1)	NA	ND (1)	ND (1)	NA	NA	ND (1)	ND (1)	ND (1)	NA	ND (1)

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H2
Summary of BDH Soil QAQC Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	TB-231130	FB-231201	TB-231201	FB-231204	TB-231204	FB-231205	TB-231205	FB-240418	FB-240419	TB-240419
Matrix	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water	Blank Water
Sample Date	11/30/2023	12/1/2023	12/1/2023	12/4/2023	12/4/2023	12/5/2023	12/5/2023	4/18/2024	4/19/2024	4/19/2024
Comments	Trip Blank	Field Blank	Trip Blank	Field Blank	Trip Blank	Field Blank	Trip Blank	Field Blank	Field Blank	Trip Blank
Physical Properties										
pH	NA	NA	NA	6.84	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds										
Anthracene	NA	ND (0.1)	NA	ND (0.1)	NA	ND (0.1)	NA	0.02 J (0.1)	NA	NA
Benzo(a)anthracene	NA	0.02 JB (0.05)	NA	ND (0.05)	NA	ND (0.05)	NA	ND (0.05)	NA	NA
Fluorene	NA	ND (0.1)	NA	ND (0.1)	NA	ND (0.1)	NA	0.04 J (0.1)	NA	NA
Naphthalene	NA	ND (0.1)	NA	ND (0.1)	NA	ND (0.1)	NA	1.3 (0.1)	NA	NA
Phenanthrene	NA	ND (0.05)	NA	ND (0.05)	NA	ND (0.05)	NA	0.03 J (0.05)	NA	NA
Metals										
Lead (Total)	NA	ND (1)	NA	ND (1)	NA	ND (1)	NA	NA	NA	NA

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H3
Summary of BDH Groundwater Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Residential	TG06-MW01	TG06-MW01	TG06-MW02	TG06-MW02	TG06-MW03	TG06-MW03	TG06-MW04	TG06-MW04	TG06-MW05	TG06-MW05
Field Sample ID	Groundwater	TG06-MW01-240514	TG06-MW01-240613	TG06-MW02-240411	TG06-MW02-240514	TG06-MW03-240411	TG06-MW03-240514	TG06-MW04-240514	TG06-MW04-240613	TG06-MW05-240411	TG06-MW05 -240514
Sample Method	Used Aquifer	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date	(TDS ≤ 2500)	5/14/2024	6/13/2024	4/11/2024	5/14/2024	4/11/2024	5/14/2024	5/14/2024	6/13/2024	4/11/2024	5/14/2024
Comments	MSC										
Volatile Organic Compounds											
Benzene	5	NA	NA	ND (0.5)	ND (0.5)	NA	NA	5.8 (0.5)	0.87 (0.5)	NA	NA
1,3,5-Trimethylbenzene	530	NA	NA	NA	NA	NA	NA	20 (2.5)	3.5 (2.5)	NA	NA
Semivolatile Organic Compounds											
Benzo(a)pyrene	0.2	NA	NA	0.02 J (0.1)	ND (0.1)	NA	NA	NA	NA	NA	NA
Naphthalene	100	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.1)	3.6 (0.1)
Metals											
Lead	5	5.202 (1)	1.85 (1)	ND (1)	11.87 (1)	ND (1)	15.23 (1)	NA	NA	1.765 (1)	117.5 (1)

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Underlined concentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500).
Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H4
Summary of BDH Groundwater QAQC Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	**FB-240411**	**TB-240411**	**FB-240514**	**TB-240514**	**FB-061324**	**TB-061324**
Sample Date	**4/11/2024**	**4/11/2024**	**5/14/2024**	**5/14/2024**	**6/13/2024**	**6/12/2024**
Comments	**Field Blank**	**Trip Blank**	**Field Blank**	**Trip Blank**	**Field Blank**	**Trip Blank**
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds	ND	NA	ND	NA	NA	NA
Metals	ND	NA	ND	NA	ND	NA

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed

Table H5
Summary of BDH LNAPL Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

	Location	GPR281
	Field Sample ID	TANK-281-LNAPL-20230118
	Sample Method	Grab
	Sample Date	1/18/2023
	Comments	
Semivolatile Organic Compounds		
	1-Methylpyrene	18.5 (2.37)
	4-Methylpyrene	26.2 (2.37)
	Acenaphthene	7.33 (2.37)
	Acenaphthylene	1.24 J (2.37)
	Anthracene	10.5 (2.37)
	2-Methylanthracene	9.36 (2.37)
	C1-Anthracenes/Phenanthrenes	142 (2.37)
	C2-Anthracenes/Phenanthrenes	436 (2.37)
	C3-Anthracenes/Phenanthrenes	410 (2.37)
	C4-Anthracenes/Phenanthrenes	207 (2.37)
	Benzo(a)anthracene	13.8 (2.37)
	Benzo(a)fluoranthene	ND (2.37)
	Benzo(a)pyrene	10.5 (2.37)
	Benzo(b)fluoranthene	9.25 (2.37)
	Benzo(b)fluorene	10.5 (2.37)
	C1-Benzo(b)thiophenes	4.1 (2.37)
	C2-Benzo(b)thiophenes	8.9 (2.37)
	C3-Benzo(b)thiophenes	21.2 (2.37)
	C4-Benzo(b)thiophenes	24.4 (2.37)
	7H-Benzo(c)fluorene	6.42 (2.37)
	Benzo(e)pyrene	15.7 (2.37)
	Benzo(g,h,i)perylene	5.04 (2.37)
	Benzo(j+k)fluoranthene	3.3 (2.37)
	2,3-Benzothiophene	ND (2.37)
	1,1-Biphenyl	ND (2.37)
	C30 Tricyclic Terpane-22R	11.8 (2.37)
	Carbazole	ND (2.37)
	Chrysene/Triphenylene	43.4 (2.37)
	C1-Chrysenes	125 (2.37)
	C2-Chrysenes	177 (2.37)
	C3-Chrysenes	176 (2.37)
	C4-Chrysenes	113 (2.37)
	cis/trans-Decalin	9.92 J (1.18)
	C1-Decalins	21.4 (1.18)
	C2-Decalins	32 (1.18)
	C3-Decalins	31.5 (1.18)
	C4-Decalins	79.2 (1.18)
	Dibenz(a,h+a,c)anthracene	2.59 (2.37)
	Dibenzofuran	2.88 (2.37)
	Dibenzothiophene	4.59 (2.37)
	C1-Dibenzothiophenes	75 (2.37)
	C3-Dibenzothiophenes	245 (2.37)
	C2-Dibenzothiophenes	186 (2.37)
	C4-Dibenzothiophenes	129 (2.37)
	2,6-Dimethylnaphthalene	49 (2.37)
	Fluoranthene	9.11 (2.37)
	C1-Fluoranthenes/Pyrenes	125 (2.37)
	C2-Fluoranthenes/Pyrenes	176 (2.37)
	C3-Fluoranthenes/Pyrenes	201 (2.37)
	C4-Fluoranthenes/Pyrenes	168 (2.37)
	Fluorene	25.1 (2.37)
	C1-Fluorenes	89.8 (2.37)
	C2-Fluorenes	264 (2.37)
	C3-Fluorenes	305 (2.37)
	Indeno(1,2,3-cd)pyrene	2.71 (2.37)
	1-Methyldibenzothiophene	14.2 (2.37)
	2/3-Methyldibenzothiophene	28.3 (2.37)
	4-Methyldibenzothiophene	30.5 (2.37)
	1-Methylnaphthalene	13.5 (2.37)
	2-Methylnaphthalene	9.36 (2.37)
	3-Methylphenanthrene	21.7 (2.37)
	9/4-Methylphenanthrene	36.4 (2.37)
	Naphthalene	4.65 (2.37)
	C1-Naphthalenes	13.5 (2.37)
	C2-Naphthalenes	110 (2.37)
	C3-Naphthalenes	268 (2.37)
	C4-Naphthalenes	272 (2.37)
	Naphthobenzothiophenes	27.5 (2.37)
	C1-Naphthobenzothiophenes	97.5 (2.37)

Table H5
Summary of BDH LNAPL Analytical Results
Tank Group 06
Bellwether District Holdings, LLC, Philadelphia, PA

Location	**GPR281**
Field Sample ID	**TANK-281-LNAPL-20230118**
Sample Method	**Grab**
Sample Date	**1/18/2023**
Comments	
C2-Naphthobenzothiophenes	137 (2.37)
C3-Naphthobenzothiophenes	112 (2.37)
C4-Naphthobenzothiophenes	81.8 (2.37)
Perylene	32.3 (2.37)
Phenanthrene	9.22 (2.37)
1-Methylphenanthrene	50 (2.37)
2-Methylphenanthrene	14.9 (2.37)
Pyrene	48.5 (2.37)
2-Methylpyrene	21.3 (2.37)
Retene	ND (2.37)
14A(H),17A(H)-20S-Cholestane/13B(H),17A(H)-20S-Ethyldiacholestane (S12)	87.1 (2.37)
14B(H),17B(H)-20R-Cholestane (S14)	49.4 (2.37)
14B(H),17B(H)-20S-Cholestane (S15)	50.8 (2.37)
14A(H),17A(H)-20R-Cholestane/13B(H),17A(H)-20R-Ethyldiacholestane (S17)	99.3 (2.37)
Unknown Sterane (S18)	18.6 (2.37)
13A,17B-20S-Ethyldiacholestane (S19)	5.31 (2.37)
14A,17A-20S-Methylcholestane (S20)	43.9 (2.37)
14B,17B-20R-Methylcholestane (S22)	46.8 (2.37)
14B,17B-20S-Methylcholestane (S23)	60.6 (2.37)
14A,17A-20R-Methylcholestane (S24)	49.7 (2.37)
14A(H),17A(H)-20S-Ethylcholestane (S25)	50.9 (2.37)
14B(H),17B(H)-20R-Ethylcholestane (S26)	67.6 (2.37)
14B(H),17B(H)-20S-Ethylcholestane (S27)	38.8 (2.37)
14A(H),17A(H)-20R-Ethylcholestane (S28)	61.9 (2.37)
13B(H),17A(H)-20S-Diacholestane (S4)	69.8 (2.37)
13B(H),17A(H)-20R-Diacholestane (S5)	38.9 (2.37)
13B,17A-20S-Methyldiacholestane (S8)	36.1 (2.37)
C29 Tricyclic Terpane-22R (T10)	13.8 (2.37)
18A-22,29,30-Trisnorneohopane-TS (T11)	66.3 (2.37)
C30 Tricyclic Terpane-22S (T11a)	17.3 (2.37)
17A(H)-22,29,30-Trisnorhopane-TM (T12)	71.4 (2.37)
17A/B,21B/A 28,30-Bisnorhopane (T14A)	25.1 (2.37)
17A(H),21B(H)-25-Norhopane (T14B)	6.77 (2.37)
30-Norhopane (T15)	239 (2.37)
18A(H)-30-Norneohopane-C29TS (T16)	71.5 (2.37)
30-Normoretane (T17)	51.8 (2.37)
18A(H)&18B(H)-Oleananes (T18)	219 (2.37)
Hopane (T19)	365 (2.37)
Moretane (T20)	61.4 (2.37)
30-Homohopane-22S (T21)	101 (2.37)
30-Homohopane-22R (T22)	83.6 (2.37)
30,31-Bishomohopane-22S (T26)	67.8 (2.37)
30,31-Bishomohopane-22R (T27)	55.4 (2.37)
30,31-Trishomohopane-22S (T30)	44.1 (2.37)
30,31-Trishomohopane-22R (T31)	25.4 (2.37)
Tetrakishomohopane-22S (T32)	28.6 (2.37)
Tetrakishomohopane-22R (T33)	22.1 (2.37)
Pentakishomohopane-22S (T34)	17 (2.37)
Pentakishomohopane-22R (T35)	17.9 (2.37)
C23 Tricyclic Terpane (T4)	36.7 (2.37)
C24 Tricyclic Terpane (T5)	28.5 (2.37)
C25 Tricyclic Terpane (T6)	25.7 (2.37)
C24 Tetracyclic Terpane (T6A)	17.7 (2.37)
C26 Tricyclic Terpane-22S (T6B)	14.8 (2.37)
C26 Tricyclic Terpane-22R (T6C)	12.7 (2.37)
C28 Tricyclic Terpane-22S (T7)	15.2 (2.37)
C28 Tricyclic Terpane-22R (T8)	14.7 (2.37)
C29 Tricyclic Terpane-22S (T9)	14.2 (2.37)
C26,20R+C27,20S-triaromatic steroid (TAS1)	255 (2.37)
C28,20S-triaromatic steroid (TAS2)	197 (2.37)
C27,20R-triaromatic steroid (TAS3)	158 (2.37)
C28,20R-triaromatic steroid (TAS4)	167 (2.37)
2,3,5-Trimethylnaphthalene	55.5 (2.37)
17A(H)-Diahopane (X)	21.6 (2.37)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
Abbreviations:
ND - Not Detected
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			GPR1088-01	GPR1088-01	GPR1088-02	GPR1088-03	GPR1088-04	GPR1088-04	GPR1088-05	GPR1088-06	GPR1116-01	GPR1116-02
Field Sample ID	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1088-01-SS01	DUP-50	GPR1088-02-SS01	GPR1088-03-SS01	GPR1088-04-SS01	DUP-51	GPR1088-05-SS01	GPR1088-06-SS01	GPR1116-01-SS01	GPR1116-02-SS01
Collection Depth (ft bgs)			3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	3.5 - 4.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/3/2022	8/3/2022	8/3/2022	8/3/2022	7/18/2022	7/18/2022
Comments				Field Duplicate				Field Duplicate				
Physical Properties												
pH	--	--	8.5	8	8	8	6.2	6.1	8.9	6.7	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00073)	0.017 (0.00092)
Cumene	10000	2500	NA	NA	NA	NA	NA	NA	NA	NA	0.028 (0.0015)	0.0091 (0.0018)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.00073)	ND (0.00092)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0015)	ND (0.0018)
Ethyl Benzene	880	70	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 J (0.0015)	0.0031 (0.0018)
Methyl tert-butyl ether	8500	2	NA	NA	NA	NA	NA	NA	NA	NA	ND (0.0029)	ND (0.0037)
Toluene	10000	100	NA	NA	NA	NA	NA	NA	NA	NA	0.00081 J (0.0015)	0.02 (0.0018)
1,2,4-Trimethylbenzene	4700	300	NA	NA	NA	NA	NA	NA	NA	NA	0.026 (0.0029)	0.029 (0.0037)
1,3,5-Trimethylbenzene	4700	93	NA	NA	NA	NA	NA	NA	NA	NA	0.016 (0.0029)	0.00097 J (0.0037)
Xylenes (total)	7900	1000	NA	NA	NA	NA	NA	NA	NA	NA	0.042 (0.0015)	0.022 (0.0018)
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	0.14 J (0.15)	0.34 (0.18)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	0.38 (0.15)	0.81 (0.18)
Benzo(a)pyrene	91	46	NA	NA	NA	NA	NA	NA	NA	NA	0.58 (0.2)	1.2 (0.24)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	0.57 (0.15)	1.1 (0.18)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	0.33 (0.2)	0.54 (0.24)
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	0.42 (0.15)	0.92 (0.18)
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	0.11 J (0.24)	0.35 (0.3)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	NA	NA	NA	NA	NA	NA	0.94 (0.24)	2 (0.3)
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	0.32 (0.15)	0.94 (0.18)
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	0.49 (0.15)	1.2 (0.18)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	19.4 (2.87)	97.8 (3.52)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1116-03	GPR1116-04	GPR1116-05	GPR1116-05	GPR1116-06	GPR1116-07	GPR1116-08	GPR1116-08R	GPR1116-08R	GPR1116-09
Field Sample ID			GPR1116-03-SS01	GPR1116-04-SS01	GPR1116-05-SS01	DUP-48	GPR1116-06-SS01	GPR1116-07-SS01	GPR1116-08-SS01	TG07-MW-03-3.0-3.5	TG07-MW-03-3.0-3.5D	GPR1116-09-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	2.0 - 2.5	2.0 - 2.5	3.0 - 3.5	2.5 - 3.0	1.5 - 2.0	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			7/18/2022	7/18/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	12/21/2022	12/21/2022	8/1/2022
Comments						Field Duplicate					Field Duplicate	
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	0.0012 (0.00072)	0.00056 J (0.00059)	0.053 (0.047)	ND (0.00088)	ND (0.38)	0.037 J (0.046)	28 (0.19)	0.036 (0.00052)	ND (0.0005)	ND (0.00051)
Cumene	10000	2500	0.015 (0.0014)	0.024 (0.0012)	0.8 (0.094)	0.004 (0.0018)	18 (0.77)	8.4 (0.093)	0.022 J (0.078)	0.0068 (0.001)	0.0074 (0.00099)	0.00064 J (0.001)
1,2-Dibromoethane	3.7	0.005	ND (0.00072)	ND (0.00059)	ND (0.047)	ND (0.00088)	ND (0.38)	ND (0.046)	ND (0.039)	NA	NA	ND (0.00051)
1,2-Dichloroethane	85	0.5	ND (0.0014)	ND (0.0012)	ND (0.094)	ND (0.0018)	ND (0.77)	ND (0.093)	ND (0.078)	NA	NA	ND (0.001)
Ethyl Benzene	880	70	0.0004 J (0.0014)	0.001 J (0.0012)	0.022 J (0.094)	ND (0.0018)	0.19 J (0.77)	0.087 J (0.093)	0.34 (0.078)	ND (0.001)	ND (0.00099)	ND (0.001)
Methyl tert-butyl ether	8500	2	ND (0.0029)	ND (0.0023)	ND (0.19)	ND (0.0035)	ND (1.5)	ND (0.18)	ND (0.16)	ND (0.0021)	ND (0.002)	ND (0.002)
Toluene	10000	100	0.0008 J (0.0014)	0.0017 (0.0012)	0.078 J (0.094)	ND (0.0018)	ND (0.77)	0.17 (0.093)	6.8 (0.078)	ND (0.001)	ND (0.00099)	ND (0.001)
1,2,4-Trimethylbenzene	4700	300	0.0095 (0.0029)	0.022 (0.0023)	0.78 (0.19)	0.0038 (0.0035)	1.2 J (1.5)	2.7 (0.18)	0.1 J (0.16)	0.0026 (0.0021)	0.0018 J (0.002)	ND (0.002)
1,3,5-Trimethylbenzene	4700	93	0.00056 J (0.0029)	0.0089 (0.0023)	ND (0.19)	0.0012 J (0.0035)	0.15 J (1.5)	0.12 J (0.18)	0.025 J (0.16)	ND (0.0021)	ND (0.002)	ND (0.002)
Xylenes (total)	7900	1000	0.004 J (0.0014)	0.015 (0.0012)	0.12 J (0.094)	0.0027 J (0.0018)	1.2 J (0.77)	0.43 (0.093)	1.1 J (0.078)	0.0018 J (0.001)	0.0019 J (0.00099)	ND (0.001)
Semivolatile Organic Compounds												
Anthracene	190000	350	0.3 (0.14)	0.28 (0.12)	0.055 J (0.13)	ND (0.14)	0.18 (0.12)	ND (6.6)	ND (0.12)	NA	NA	ND (0.12)
Benzo(a)anthracene	130	340	0.39 (0.14)	0.49 (0.12)	0.24 (0.13)	0.04 J (0.14)	0.27 (0.12)	ND (6.6)	0.029 J (0.12)	NA	NA	ND (0.12)
Benzo(a)pyrene	91	46	0.42 (0.19)	0.66 (0.16)	0.4 (0.17)	ND (0.18)	0.41 (0.16)	ND (8.8)	ND (0.17)	0.067 J (0.15)	0.085 J (0.15)	ND (0.16)
Benzo(b)fluoranthene	76	170	0.49 (0.14)	0.67 (0.12)	0.42 (0.13)	0.042 J (0.14)	0.44 (0.12)	ND (6.6)	0.035 J (0.12)	NA	NA	ND (0.12)
Benzo(g,h,i)perylene	190000	180	0.22 (0.19)	0.52 (0.16)	0.26 (0.17)	0.028 J (0.18)	0.31 (0.16)	ND (8.8)	ND (0.17)	NA	NA	ND (0.16)
Chrysene	760	230	0.77 (0.14)	0.52 (0.12)	0.27 (0.13)	0.044 J (0.14)	0.3 (0.12)	ND (6.6)	0.03 J (0.12)	NA	NA	ND (0.12)
Fluorene	130000	3800	0.75 (0.24)	0.16 J (0.2)	0.056 J (0.22)	0.087 J (0.23)	0.22 (0.2)	1.4 J (11)	0.024 J (0.21)	NA	NA	ND (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.52 (0.24)	2.8 (0.2)	0.35 (0.22)	0.16 J (0.23)	1.1 (0.2)	ND (11)	ND (0.21)	0.081 (0.038)	0.098 (0.038)	ND (0.2)
Phenanthrene	190000	10000	1.5 (0.14)	0.52 (0.12)	0.15 (0.13)	0.19 (0.14)	0.67 (0.12)	2.8 J (6.6)	0.062 J (0.12)	NA	NA	ND (0.12)
Pyrene	96000	2200	0.68 (0.14)	0.54 (0.12)	0.21 (0.13)	0.1 J (0.14)	0.55 (0.12)	ND (6.6)	0.041 J (0.12)	NA	NA	ND (0.12)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	1360 (2.83)	20.2 (2.31)	67.9 (2.49)	206 (13.4)	104 (2.25)	119 (2.25)	85.3 (12.2)	NA	NA	40.8 (2.31)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1116-10	GPR1116-11	GPR1116-12	GPR1116-13	GPR1116-14	GPR1116-15	GPR1117-01	GPR1117-02	GPR1117-03R	GPR1117-03
Field Sample ID			GPR1116-10-SS01	GPR1116-11-SS01	GPR1116-12-SS01	GPR1116-13-SS01	GPR1116-14-SS01	GPR1116-15-SS01	GPR1117-01-SS01	GPR1117-02-SS01	GPR1117-03R-0.0-0.5	GPR1117-03-SS01
Collection Depth (ft bgs)			3.0 - 3.5	3.0 - 3.5	2.0 - 2.5	3.0 - 3.5	3.5 - 4.0	1.5 - 2.0	4.5 - 5.0	4.0 - 4.5	0.0 - 0.5	3.5 - 4.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			8/1/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	7/18/2022	7/18/2022	1/3/2023	7/18/2022
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	0.0003 J (0.00051)	ND (0.041)	0.052 (0.033)	0.00064 J (0.00065)	0.0012 (0.00093)	0.05 J (0.097)	ND (0.00087)	ND (0.00083)	0.00032 J (0.0005)	0.00024 J (0.00071)
Cumene	10000	2500	0.00054 J (0.001)	0.068 J (0.083)	3.8 (0.066)	0.0034 (0.0013)	0.02 (0.0019)	1.1 (0.19)	0.0055 (0.0017)	0.001 J (0.0017)	0.11 (0.00099)	0.00049 J (0.0014)
1,2-Dibromoethane	3.7	0.005	ND (0.00051)	ND (0.041)	ND (0.033)	ND (0.00065)	ND (0.00093)	ND (0.097)	ND (0.00087)	ND (0.00083)	NA	ND (0.00071)
1,2-Dichloroethane	85	0.5	ND (0.001)	ND (0.083)	ND (0.066)	ND (0.0013)	ND (0.0019)	ND (0.19)	ND (0.0017)	ND (0.0017)	NA	ND (0.0014)
Ethyl Benzene	880	70	0.00022 J (0.001)	0.015 J (0.083)	0.12 (0.066)	0.0011 J (0.0013)	0.00041 J (0.0019)	0.27 (0.19)	ND (0.0017)	ND (0.0017)	ND (0.00099)	ND (0.0014)
Methyl tert-butyl ether	8500	2	ND (0.002)	ND (0.16)	ND (0.13)	ND (0.0026)	ND (0.0037)	ND (0.39)	ND (0.0035)	ND (0.0033)	ND (0.002)	ND (0.0028)
Toluene	10000	100	0.00084 J (0.001)	ND (0.083)	0.29 (0.066)	0.0029 (0.0013)	ND (0.0019)	0.35 (0.19)	ND (0.0017)	ND (0.0017)	ND (0.00099)	ND (0.0014)
1,2,4-Trimethylbenzene	4700	300	0.00072 J (0.002)	ND (0.16)	16 (0.13)	0.0048 (0.0026)	0.0014 J (0.0037)	2.6 (0.39)	0.0023 J (0.0035)	0.0017 J (0.0033)	ND (0.002)	0.00085 J (0.0028)
1,3,5-Trimethylbenzene	4700	93	0.00025 J (0.002)	ND (0.16)	3.8 (0.13)	0.0018 J (0.0026)	0.0012 J (0.0037)	0.38 J (0.39)	0.0016 J (0.0035)	0.0015 J (0.0033)	ND (0.002)	ND (0.0028)
Xylenes (total)	7900	1000	0.0016 J (0.001)	0.11 J (0.083)	1.3 (0.066)	0.014 (0.0013)	0.0025 J (0.0019)	1.4 (0.19)	0.0014 J (0.0017)	0.00098 J (0.0017)	ND (0.00099)	0.00048 J (0.0014)
Semivolatile Organic Compounds												
Anthracene	190000	350	0.22 (0.13)	0.039 J (0.12)	0.45 (0.11)	0.48 (0.12)	0.18 (0.16)	1.3 (0.14)	0.22 (0.17)	0.29 (0.14)	NA	1.4 (0.14)
Benzo(a)anthracene	130	340	0.4 (0.13)	0.13 (0.12)	0.34 (0.11)	0.85 (0.12)	0.42 (0.16)	3.7 (0.14)	0.72 (0.17)	0.76 (0.14)	NA	0.88 (0.14)
Benzo(a)pyrene	91	46	1.4 (0.17)	0.17 (0.16)	0.62 (0.15)	0.97 (0.16)	0.43 (0.22)	5.2 (0.18)	1 (0.22)	1.1 (0.19)	0.76 (0.16)	0.84 (0.19)
Benzo(b)fluoranthene	76	170	1.2 (0.13)	0.18 (0.12)	0.68 (0.11)	0.92 (0.12)	0.44 (0.16)	5.1 (0.14)	0.97 (0.17)	1 (0.14)	NA	0.79 (0.14)
Benzo(g,h,i)perylene	190000	180	0.94 (0.17)	0.092 J (0.16)	0.31 (0.15)	0.45 (0.16)	0.19 J (0.22)	3.8 (0.18)	0.5 (0.22)	0.58 (0.19)	NA	0.41 (0.19)
Chrysene	760	230	0.52 (0.13)	0.16 (0.12)	0.92 (0.11)	0.86 (0.12)	0.36 (0.16)	3.7 (0.14)	0.79 (0.17)	0.88 (0.14)	NA	1 (0.14)
Fluorene	130000	3800	0.14 J (0.22)	0.036 J (0.2)	1.2 (0.19)	0.53 (0.21)	0.74 (0.27)	0.52 (0.23)	0.26 J (0.28)	0.27 (0.24)	NA	2.7 (0.24)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	2.2 (0.22)	0.16 J (0.2)	0.32 (0.19)	1.3 (0.21)	0.37 (0.27)	3.9 (0.23)	1.1 (0.28)	2 (0.24)	0.46 (0.039)	6.3 (0.24)
Phenanthrene	190000	10000	0.34 (0.13)	0.083 J (0.12)	1.6 (0.11)	1.5 (0.12)	1.5 (0.16)	2.8 (0.14)	0.86 (0.17)	0.8 (0.14)	NA	8.9 (0.14)
Pyrene	96000	2200	0.38 (0.13)	0.16 (0.12)	0.62 (0.11)	1.5 (0.12)	0.62 (0.16)	4.3 (0.14)	1.2 (0.17)	1.5 (0.14)	NA	3.2 (0.14)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	13.9 (2.48)	193 (2.3)	97.5 (2.15)	375 (2.37)	60.2 (3.22)	189 (2.68)	157 (6.55)	125 (5.59)	NA	133 (5.8)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR1117-04	GPR1117-05	GPR1117-06	GPR1117-07	GPR1117-08	GPR494-01	GPR494-02	GPR494-03	GPR494-04	GPR494-05
Field Sample ID			GPR1117-04-SS01	GPR1117-05-SS01	GPR1117-06-SS01	GPR1117-07-SS01	GPR1117-08-SS01	GPR494-01-SS01	GPR494-02-SS01	GPR494-03-SS01	GPR494-04-SS01	GPR494-05-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	1.5 - 2.0	4.0 - 4.5	2.5 - 3.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			7/18/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022	8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/2/2022
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	0.11 J (0.28)	0.0011 (0.0011)	0.0012 (0.00094)	0.00049 J (0.00097)	0.0054 (0.00059)	ND (0.025)	0.037 (0.036)	0.0004 J (0.00048)	0.00036 J (0.00061)	ND (0.068)
Cumene	10000	2500	3.7 (0.56)	ND (0.0022)	0.0012 J (0.0019)	ND (0.0019)	0.00028 J (0.0012)	ND (0.049)	0.63 (0.072)	0.034 (0.00096)	0.0072 (0.0012)	2.1 (0.14)
1,2-Dibromoethane	3.7	0.005	ND (0.28)	ND (0.0011)	ND (0.00094)	ND (0.00097)	ND (0.00059)	ND (0.025)	ND (0.036)	ND (0.00048)	ND (0.00061)	ND (0.068)
1,2-Dichloroethane	85	0.5	ND (0.56)	ND (0.0022)	ND (0.0019)	ND (0.0019)	ND (0.0012)	ND (0.049)	ND (0.072)	ND (0.00096)	ND (0.0012)	ND (0.14)
Ethyl Benzene	880	70	0.23 J (0.56)	ND (0.0022)	ND (0.0019)	ND (0.0019)	ND (0.0012)	0.022 J (0.049)	0.064 J (0.072)	0.0012 (0.00096)	0.001 J (0.0012)	0.046 J (0.14)
Methyl tert-butyl ether	8500	2	ND (1.1)	ND (0.0044)	ND (0.0038)	ND (0.0039)	ND (0.0024)	ND (0.099)	ND (0.14)	ND (0.0019)	ND (0.0024)	ND (0.27)
Toluene	10000	100	0.34 J (0.56)	ND (0.0022)	0.002 (0.0019)	ND (0.0019)	ND (0.0012)	ND (0.049)	0.047 J (0.072)	0.00082 J (0.00096)	0.0011 J (0.0012)	0.089 J (0.14)
1,2,4-Trimethylbenzene	4700	300	1.3 (1.1)	ND (0.0044)	0.009 (0.0038)	ND (0.0039)	ND (0.0024)	0.22 (0.099)	0.061 J (0.14)	0.0017 J (0.0019)	0.001 J (0.0024)	0.15 J (0.27)
1,3,5-Trimethylbenzene	4700	93	0.41 J (1.1)	ND (0.0044)	0.0025 J (0.0038)	ND (0.0039)	ND (0.0024)	0.06 J (0.099)	ND (0.14)	0.0004 J (0.0019)	0.0074 (0.0024)	ND (0.27)
Xylenes (total)	7900	1000	1.1 J (0.56)	ND (0.0022)	0.0048 J (0.0019)	ND (0.0019)	ND (0.0012)	0.12 J (0.049)	0.22 J (0.072)	0.013 (0.00096)	0.0068 (0.0012)	0.25 J (0.14)
Semivolatile Organic Compounds												
Anthracene	190000	350	0.96 (0.12)	0.54 (0.22)	0.22 (0.14)	0.098 J (0.17)	0.3 (0.13)	4.8 (1.1)	7.1 (1.1)	4 (0.54)	0.59 (0.56)	4.7 (1.2)
Benzo(a)anthracene	130	340	2.9 (0.12)	0.67 (0.22)	0.53 (0.14)	0.26 (0.17)	0.59 (0.13)	9.7 (1.1)	20 (1.1)	7.8 (0.54)	3.9 (0.56)	11 (1.2)
Benzo(a)pyrene	91	46	3.1 (0.16)	0.64 (0.3)	0.72 (0.19)	0.3 (0.22)	0.54 (0.17)	7.7 (1.4)	18 (1.5)	7.4 (0.72)	7.4 (0.75)	8.7 (1.6)
Benzo(b)fluoranthene	76	170	3.4 (0.12)	0.75 (0.22)	0.76 (0.14)	0.36 (0.17)	0.61 (0.13)	3.7 (1.1)	8.4 (1.1)	3.6 (0.54)	4.6 (0.56)	3.9 (1.2)
Benzo(g,h,i)perylene	190000	180	1.6 (0.16)	0.36 (0.3)	0.49 (0.19)	0.2 J (0.22)	0.26 (0.17)	2.5 (1.4)	7 (1.5)	2.4 (0.72)	3.5 (0.75)	2.7 (1.6)
Chrysene	760	230	2.8 (0.12)	0.66 (0.22)	0.74 (0.14)	0.27 (0.17)	0.58 (0.13)	13 (1.1)	34 (1.1)	14 (0.54)	9.7 (0.56)	16 (1.2)
Fluorene	130000	3800	1 (0.2)	0.19 J (0.37)	0.12 J (0.24)	0.11 J (0.28)	0.12 J (0.21)	5.2 (1.8)	9 (1.9)	4.8 (0.91)	0.57 J (0.93)	8.1 (2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	2 (0.2)	0.32 J (0.37)	1.2 (0.24)	0.45 (0.28)	0.14 J (0.21)	1.3 J (1.8)	1.4 J (1.9)	ND (0.91)	0.36 J (0.93)	0.94 J (2)
Phenanthrene	190000	10000	3.5 (0.12)	1.2 (0.22)	0.52 (0.14)	0.39 (0.17)	1.1 (0.13)	30 (1.1)	71 (1.1)	29 (0.54)	1.1 (0.56)	36 (1.2)
Pyrene	96000	2200	4.8 (0.12)	1.1 (0.22)	0.76 (0.14)	0.39 (0.17)	1 (0.13)	11 (1.1)	39 (1.1)	20 (0.54)	8.6 (0.56)	15 (1.2)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	66.9 (2.44)	619 (4.42)	687 (2.85)	981 (3.24)	20.4 (2.46)	517 (2.11)	90.3 (2.21)	12.9 (2.12)	238 (2.14)	32 (2.37)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR494-06	GPR494-07	GPR494-08R	GPR494-08	GPR494-09	GPR790-01	GPR790-02	GPR790-03	GPR790-04	GPR790-05R
Field Sample ID			GPR494-06-SS01	GPR494-07-SS01	TG07-MW-01-0.0-0.5	GPR494-08-SS01	GPR494-09-SS01	GPR790-01-SS01	GPR790-02-SS01	GPR790-03-SS01	GPR790-04-SS01	TG07-MW-05-4.0-4.5
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	0.0 - 0.5	3.0 - 3.5	3.0 - 3.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	3.0 - 3.5	4.0 - 4.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			8/2/2022	8/2/2022	12/21/2022	8/2/2022	8/2/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	12/21/2022
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	0.00059 (0.00056)	0.0005 J (0.00059)	0.0088 (0.00043)	0.016 (0.0006)	ND (0.00069)	520 (3.4)	130 (0.3)	2.8 (0.26)	0.2 J (0.59)	2300 (5.9)
Cumene	10000	2500	0.0091 (0.0011)	0.14 (0.0012)	ND (0.00086)	0.0029 (0.0014)	ND (0.0014)	NA	NA	NA	NA	240 (12)
1,2-Dibromoethane	3.7	0.005	ND (0.00056)	ND (0.00059)	NA	ND (0.0006)	ND (0.00069)	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (0.0011)	ND (0.0012)	NA	ND (0.0012)	ND (0.0014)	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	0.00067 J (0.0011)	0.0028 (0.0012)	ND (0.00086)	0.0036 (0.0012)	ND (0.0014)	NA	NA	NA	NA	25 (12)
Methyl tert-butyl ether	8500	2	ND (0.0022)	ND (0.0024)	ND (0.0017)	ND (0.0024)	ND (0.0028)	NA	NA	NA	NA	ND (24)
Toluene	10000	100	0.0012 (0.0011)	0.0043 (0.0012)	ND (0.00086)	0.0057 (0.0012)	ND (0.0014)	NA	NA	NA	NA	350 (12)
1,2,4-Trimethylbenzene	4700	300	0.002 J (0.0022)	0.018 (0.0024)	ND (0.0017)	0.012 (0.0028)	ND (0.0028)	NA	NA	NA	NA	65 (24)
1,3,5-Trimethylbenzene	4700	93	ND (0.0022)	0.0025 (0.0024)	ND (0.0017)	0.0039 (0.0028)	ND (0.0028)	NA	NA	NA	NA	33 (24)
Xylenes (total)	7900	1000	0.0084 (0.0011)	0.061 (0.0012)	0.0016 J (0.00086)	0.02 (0.0012)	ND (0.0014)	NA	NA	NA	NA	140 (0.12)
Semivolatile Organic Compounds												
Anthracene	190000	350	1.8 (1.1)	2.8 (0.58)	NA	23 (4)	0.13 (0.12)	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	2.8 (1.1)	3.5 (0.58)	NA	71 (4)	0.73 (0.12)	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	2.1 (1.4)	2.7 (0.78)	0.62 (0.46)	54 (5.4)	1.1 (0.16)	NA	NA	NA	NA	ND (0.77)
Benzo(b)fluoranthene	76	170	1.2 (1.1)	1.1 (0.58)	NA	28 (4)	1.2 (0.12)	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	0.75 J (1.4)	0.7 J (0.78)	NA	18 (5.4)	0.51 (0.16)	NA	NA	NA	NA	NA
Chrysene	760	230	3.1 (1.1)	7 (0.58)	NA	170 (4)	0.7 (0.12)	NA	NA	NA	NA	NA
Fluorene	130000	3800	1.4 J (1.8)	6.6 (0.98)	NA	11 (6.7)	0.03 J (0.2)	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.42 J (1.8)	ND (0.98)	ND (0.11)	4.8 J (6.7)	0.059 J (0.2)	NA	NA	NA	NA	7.5 (0.19)
Phenanthrene	190000	10000	7.6 (1.1)	30 (0.58)	NA	110 (4)	0.45 (0.12)	NA	NA	NA	NA	NA
Pyrene	96000	2200	2.3 (1.1)	7.8 (0.58)	NA	130 (4)	0.84 (0.12)	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	78.1 (2.06)	19.3 (2.28)	NA	114 (2.26)	70.9 (2.36)	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR790-05R	GPR790-05	GPR790-06	GPR790-07	GPR790-08	GPR791-01	GPR791-02	GPR791-03	GPR791-04	GPR791-04R
Field Sample ID			TG07-MW-05-4.5-5.0	GPR790-05-SS01	GPR790-06-SS01	GPR790-07-SS01	GPR790-08-0.0-0.5	GPR791-01-SS01	GPR791-02-SS01	GPR791-03-SS01	GPR791-04-SS01	TG07-MW-06-4.0-4.5
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	0.0 - 0.5	4.5 - 5.0	3.5 - 4.0	4.0 - 4.5	3.0 - 3.5	4.0 - 4.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/21/2022	8/1/2022	8/1/2022	8/1/2022	1/3/2023	8/1/2022	8/1/2022	8/1/2022	8/1/2022	12/22/2022
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	1700 (4.9)	3000 (26)	4.6 (0.42)	34 (6.5)	0.00076 (0.00051)	1200 (2.4)	4 J (4.5)	160 (0.49)	1300 (5)	170 (6.2)
Cumene	10000	2500	99 (4.9)	NA	NA	NA	0.0063 (0.001)	NA	NA	NA	NA	3400 (12)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	12 (4.9)	NA	NA	NA	0.00019 J (0.001)	NA	NA	NA	NA	2.7 (0.62)
Methyl tert-butyl ether	8500	2	ND (9.9)	NA	NA	NA	ND (0.002)	NA	NA	NA	NA	ND (1.2)
Toluene	10000	100	230 (4.9)	NA	NA	NA	0.00074 J (0.001)	NA	NA	NA	NA	3.6 (0.62)
1,2,4-Trimethylbenzene	4700	300	27 (9.9)	NA	NA	NA	0.00039 J (0.002)	NA	NA	NA	NA	4.9 (1.2)
1,3,5-Trimethylbenzene	4700	93	14 (9.9)	NA	NA	NA	ND (0.002)	NA	NA	NA	NA	0.28 J (1.2)
Xylenes (total)	7900	1000	66 (4.9)	NA	NA	NA	0.00068 J (0.001)	NA	NA	NA	NA	2.6 J (0.62)
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (0.77)	NA	NA	NA	0.47 (0.16)	NA	NA	NA	NA	0.18 (0.15)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	5 (0.19)	NA	NA	NA	0.036 J (0.04)	NA	NA	NA	NA	5.4 (0.037)
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR791-04R	GPR791-05	GPR791-06	GPR791-07	GPR791-08	GPR791-09	GPR791-09	GPR792-01	GPR792-02	GPR792-02
Field Sample ID			TG07-MW-06-4.5-5.0	GPR791-05-SS01	GPR791-06-SS01	GPR791-07-SS01	GPR791-08-SS01	GPR791-09-0.0-0.5	GPR791-09-2.0-2.5	GPR792-01-SS01	GPR792-02-SS01	DUP-49
Collection Depth (ft bgs)			4.5 - 5.0	3.0 - 3.5	3.0 - 3.5	3.0 - 3.5	4.0 - 4.5	0.0 - 0.5	2.0 - 2.5	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			12/22/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	1/3/2023	1/3/2023	8/2/2022	8/2/2022	8/2/2022
Comments												Field Duplicate
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	140 (3)	9.8 (0.6)	380 (1.8)	13 (0.29)	7.1 (0.36)	0.0046 (0.00041)	0.0035 (0.00049)	NA	NA	NA
Cumene	10000	2500	1900 (12)	NA	NA	NA	NA	0.14 (0.00081)	0.0043 (0.00099)	2400 (15)	4700 (49)	4700 (59)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	1 J (6)	NA	NA	NA	NA	0.00061 J (0.00081)	ND (0.00099)	NA	NA	NA
Methyl tert-butyl ether	8500	2	ND (12)	NA	NA	NA	NA	ND (0.0016)	ND (0.002)	NA	NA	NA
Toluene	10000	100	3.8 J (6)	NA	NA	NA	NA	0.0045 (0.00081)	0.00064 J (0.00099)	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	2.8 J (12)	NA	NA	NA	NA	0.00067 J (0.0016)	ND (0.002)	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	ND (12)	NA	NA	NA	NA	0.00028 J (0.0016)	ND (0.002)	NA	NA	NA
Xylenes (total)	7900	1000	ND (6)	NA	NA	NA	NA	0.0026 J (0.00081)	ND (0.00099)	NA	NA	NA
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (0.73)	NA	NA	NA	NA	0.51 (0.14)	ND (0.15)	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	0.37 (0.18)	NA	NA	NA	NA	0.12 (0.036)	ND (0.037)	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR792-03R	GPR792-03R	GPR792-03	GPR792-04	GPR792-05	GPR792-06	GPR792-07	GPR793-01	GPR793-02	GPR793-03R
Field Sample ID			GPR792-03R-1.5-2.0	GPR792-03R-2.0-2.5	GPR792-03-SS01	GPR792-04-SS01	GPR792-05-SS01	GPR792-06-SS01	GPR792-07-SS01	GPR793-01-SS01	GPR793-02-SS01	GPR793-03R-2.5-3.0
Collection Depth (ft bgs)			1.5 - 2.0	2.0 - 2.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.0 - 4.5	2.5 - 3.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			1/3/2023	1/3/2023	8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/2/2022	1/3/2023
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	0.32 (0.14)	0.46 (0.12)	NA	NA	NA	NA	NA	NA	NA	ND (2.5)
Cumene	10000	2500	160 (0.56)	160 (1)	12000 (88)	5000 (54)	8900 (65)	4600 (70)	1400 (12)	5500 (92)	11000 (100)	1500 (50)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	0.06 J (0.28)	0.052 J (0.25)	NA	NA	NA	NA	NA	NA	NA	ND (5)
Methyl tert-butyl ether	8500	2	ND (0.56)	ND (0.5)	NA	NA	NA	NA	NA	NA	NA	ND (10)
Toluene	10000	100	ND (0.28)	ND (0.25)	NA	NA	NA	NA	NA	NA	NA	ND (5)
1,2,4-Trimethylbenzene	4700	300	0.12 J (0.56)	0.14 J (0.5)	NA	NA	NA	NA	NA	NA	NA	ND (10)
1,3,5-Trimethylbenzene	4700	93	0.067 J (0.56)	0.074 J (0.5)	NA	NA	NA	NA	NA	NA	NA	ND (10)
Xylenes (total)	7900	1000	ND (0.28)	ND (0.25)	NA	NA	NA	NA	NA	NA	NA	ND (5)
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (0.75)	ND (2.8)	NA	NA	NA	NA	NA	NA	NA	ND (0.72)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.19)	ND (0.71)	NA	NA	NA	NA	NA	NA	NA	ND (0.18)
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR793-03R	GPR793-03	GPR793-04	GPR793-05	GPR793-06	GPR794-01	GPR794-02	GPR794-03	GPR794-04	GPR794-05
Field Sample ID			GPR793-03R-3.0-3.5	GPR793-03-SS01	GPR793-04-SS01	GPR793-05-SS01	GPR793-06-SS01	GPR794-01-SS01	GPR794-02-SS01	GPR794-03-SS01	GPR794-04-SS01	GPR794-05-SS01
Collection Depth (ft bgs)			3.0 - 3.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	3.5 - 5.0	4.5 - 5.0	4.5 - 5.0	3.0 - 3.5	4.5 - 5.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			1/3/2023	8/2/2022	8/2/2022	8/2/2022	8/2/2022	8/3/2022 & 10/21/2022	8/3/2022 & 10/21/2022	8/3/2022 & 10/21/2022	8/3/2022 & 10/21/2022	8/3/2022 & 10/21/2022
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	ND (2.8)	NA	NA	NA	NA	2200 (14)	2800 (8.3)	0.41 (0.028)	7800 (43)	2600 (13)
Cumene	10000	2500	2200 (22)	15000 (120)	14000 (110)	1900 (9.2)	1800 (11)	4000 (29)	3000 (16)	0.38 (0.055)	12000 (87)	2500 (27)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	ND (1.2)	ND (2.1)	ND (0.00045)	ND (8.7)	ND (1.7)
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	ND (2.3)	ND (4.1)	ND (0.0009)	ND (17)	ND (3.4)
Ethyl Benzene	880	70	ND (5.6)	NA	NA	NA	NA	74 (2.3)	26 (4.1)	0.02 (0.0009)	120 (17)	31 (3.4)
Methyl tert-butyl ether	8500	2	ND (11)	NA	NA	NA	NA	ND (4.6)	ND (8.3)	ND (0.0018)	ND (35)	ND (6.7)
Toluene	10000	100	ND (5.6)	NA	NA	NA	NA	3400 (29)	1200 (4.1)	0.21 (0.055)	6100 (87)	1800 (27)
1,2,4-Trimethylbenzene	4700	300	ND (11)	NA	NA	NA	NA	32 (4.6)	8.4 (8.3)	0.004 (0.0018)	79 (35)	7.7 (6.7)
1,3,5-Trimethylbenzene	4700	93	ND (11)	NA	NA	NA	NA	16 (4.6)	3.9 J (8.3)	0.0024 (0.0018)	35 (35)	3.5 J (6.7)
Xylenes (total)	7900	1000	ND (5.6)	NA	NA	NA	NA	300 (2.3)	110 (4.1)	0.073 (0.0009)	520 (17)	140 (3.4)
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	0.51 J (1.2)	ND (1.3)	ND (0.11)	0.46 J (1.2)	0.07 J (0.12)
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	0.27 J (1.2)	0.46 J (1.3)	0.038 J (0.11)	0.64 J (1.2)	0.035 J (0.12)
Benzo(a)pyrene	91	46	ND (2.9)	NA	NA	NA	NA	ND (1.5)	ND (1.7)	0.049 J (0.14)	0.48 J (1.5)	ND (0.16)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	ND (1.2)	0.47 J (1.3)	0.065 J (0.11)	0.78 J (1.2)	ND (0.12)
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	ND (1.5)	ND (1.7)	0.03 J (0.14)	0.41 J (1.5)	ND (0.16)
Chrysene	760	230	NA	NA	NA	NA	NA	0.35 J (1.2)	0.44 J (1.3)	0.038 J (0.11)	1.4 (1.2)	0.033 J (0.12)
Fluorene	130000	3800	NA	NA	NA	NA	NA	2 (1.9)	0.47 J (2.1)	ND (0.18)	1 J (1.9)	0.17 J (0.2)
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	ND (0.73)	NA	NA	NA	NA	3.5 (1.9)	1 J (2.1)	ND (0.18)	3.1 (1.9)	1.7 (0.2)
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	8.7 (1.2)	2.9 (1.3)	0.037 J (0.11)	1.9 (1.2)	0.43 (0.12)
Pyrene	96000	2200	NA	NA	NA	NA	NA	0.71 J (1.2)	0.86 J (1.3)	0.049 J (0.11)	2 (1.2)	0.058 J (0.12)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	ND (9.5)	ND (9.9)	ND (9.9)	ND (9.9)	ND (9.3)
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	408 (2.32)	347 (2.56)	24.2 (2.2)	63.8 (2.34)	23.6 (2.35)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			GPR794-06	GPR794-07	GPR794-08R	GPR794-08	GPR794-08R	GPR794-09	GPR794-09	GPR794-09	GPR794-10	GPR798-01
Field Sample ID	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR794-06-SS01	GPR794-07-SS01	TG07-MW-07-4.0-4.5	GPR794-08-SS01	TG07-MW-07-4.5-5.0	GPR794-09-1.5-2.0	GPR794-09-2.0-2.5	GPR794-09-2.0-2.5D	GPR794-10-1.5-2.0	GPR798-01-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	1.5 - 2.0	2.0 - 2.5	2.0 - 2.5	1.5 - 2.0	4.5 - 5.0
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			8/3/2022 & 10/21/2022	8/3/2022 & 10/21/2022	12/21/2022	8/3/2022 & 10/21/2022	12/21/2022	1/3/2023	1/3/2023	1/3/2023	1/3/2023	7/18/2022
Comments										Field Duplicate		
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	2000 (5.9)	130 (0.22)	2500 (5.6)	12000 (30)	3700 (29)	1 (0.024)	2.6 (0.024)	1.1 (0.023)	0.35 (0.047)	3.4 (0.094)
Cumene	10000	2500	4800 (59)	330 (2.2)	750 (11)	7600 (60)	1600 (5.8)	18 (0.098)	20 (0.12)	14 (0.093)	42 (0.47)	NA
1,2-Dibromoethane	3.7	0.005	ND (5.9)	ND (0.22)	NA	ND (0.76)	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	ND (12)	ND (0.45)	NA	ND (1.5)	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	110 (12)	1.5 (0.45)	48 (11)	120 (1.5)	93 (5.8)	0.11 (0.049)	0.32 (0.049)	0.21 (0.046)	0.02 J (0.094)	NA
Methyl tert-butyl ether	8500	2	ND (24)	ND (0.89)	ND (22)	ND (3)	ND (12)	ND (0.098)	ND (0.097)	ND (0.093)	ND (0.19)	NA
Toluene	10000	100	4300 (59)	8.7 (0.45)	240 (11)	6200 (60)	540 (5.8)	0.42 (0.049)	1.7 (0.049)	0.83 (0.046)	0.27 (0.094)	NA
1,2,4-Trimethylbenzene	4700	300	48 (24)	0.81 J (0.89)	140 (22)	35 (3)	330 (12)	ND (0.098)	0.047 J (0.097)	0.042 J (0.093)	ND (0.19)	NA
1,3,5-Trimethylbenzene	4700	93	23 J (24)	0.2 J (0.89)	57 (22)	15 (3)	140 (12)	ND (0.098)	0.016 J (0.097)	0.017 J (0.093)	ND (0.19)	NA
Xylenes (total)	7900	1000	490 (12)	3.1 (0.45)	290 (11)	480 (1.5)	560 (5.8)	0.32 (0.049)	1.1 (0.049)	0.81 (0.046)	0.076 J (0.094)	NA
Semivolatile Organic Compounds												
Anthracene	190000	350	0.67 J (1.1)	ND (0.11)	NA	ND (1.2)	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	0.41 J (1.1)	0.027 J (0.11)	NA	ND (1.2)	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	ND (1.5)	ND (0.15)	ND (1.5)	ND (1.6)	ND (1.5)	0.19 (0.14)	0.087 J (0.14)	0.058 J (0.14)	0.047 J (0.14)	NA
Benzo(b)fluoranthene	76	170	0.36 J (1.1)	0.034 J (0.11)	NA	ND (1.2)	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	ND (1.5)	ND (0.15)	NA	ND (1.6)	NA	NA	NA	NA	NA	NA
Chrysene	760	230	0.35 J (1.1)	0.041 J (0.11)	NA	ND (1.2)	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	1.4 J (1.9)	ND (0.18)	NA	0.75 J (2)	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	6.3 (1.9)	0.054 J (0.18)	36 (0.39)	8.7 (2)	52 (0.38)	0.031 J (0.036)	0.27 (0.036)	0.2 (0.036)	0.3 (0.036)	NA
Phenanthrene	190000	10000	3 (1.1)	0.19 (0.11)	NA	2.3 (1.2)	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	0.94 J (1.1)	0.077 J (0.11)	NA	0.28 J (1.2)	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	ND (9.1)	ND (9.7)	NA	ND (9.3)	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	429 (2.2)	3.73 (2.21)	NA	132 (2.4)	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location			GPR798-02	GPR798-03	GPR798-04R	GPR798-04R	GPR798-04	GPR798-04	GPR798-05	GPR798-06	GPR798-07	GPR799-01
Field Sample ID	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR798-02-SS01	GPR798-03-SS01	TG07-MW-04-1.5-2.0	TG07-MW-04-2.0-2.5	GPR798-04-SS01	DUP-47	GPR798-05-SS01	GPR798-06-SS01	GPR798-07-SS01	GPR799-01-SS01
Collection Depth (ft bgs)			4.5 - 5.0	4.0 - 4.5	1.5 - 2.0	2.0 - 2.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	4.0 - 4.5	4.0 - 4.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			7/18/2022	7/18/2022	1/3/2023	1/3/2023	7/18/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022
Comments								Field Duplicate				
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	6.2 (0.12)	0.4 (0.069)	440 (3)	170 (0.72)	14 (0.43)	5900 (58)	1.4 (0.052)	2.2 (0.13)	7.8 (0.1)	2.2 (0.27)
Cumene	10000	2500	NA	NA	41 (1.2)	42 (0.36)	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	NA	ND (1.2)	0.081 J (0.36)	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	8500	2	NA	NA	ND (2.4)	ND (0.72)	NA	NA	NA	NA	NA	NA
Toluene	10000	100	NA	NA	ND (1.2)	0.28 J (0.36)	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4700	300	NA	NA	ND (2.4)	0.51 J (0.72)	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4700	93	NA	NA	ND (2.4)	0.24 J (0.72)	NA	NA	NA	NA	NA	NA
Xylenes (total)	7900	1000	NA	NA	ND (1.2)	0.17 J (0.36)	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	NA	0.076 J (0.15)	ND (0.17)	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	NA	1 (0.038)	0.23 (0.043)	NA	NA	NA	NA	NA	NA
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPR799-02	GPR799-03R	GPR799-03R	GPR799-03	GPR799-04	GPR799-05	GPR799-06	GPR799-07	GPR799-08	GPR799-08
Field Sample ID			GPR799-02-SS01	GPR-799-03R-3.0-3.5	GPR-799-03R-3.5-4.0	GPR799-03-SS01	GPR799-04-SS01	GPR799-05-SS01	GPR799-06-SS01	GPR799-07-SS01	GPR799-08-1.0-1.5	GPR799-08-3.0-3.5
Collection Depth (ft bgs)			4.0 - 4.5	3.0 - 3.5	3.5 - 4.0	4.0 - 4.5	4.0 - 4.5	4.0 - 4.5	4.5 - 5.0	4.5 - 5.0	1.0 - 1.5	3.0 - 3.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			7/18/2022	12/21/2022	12/21/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022	1/3/2023	1/3/2023
Comments												
Physical Properties												
pH	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds												
Benzene	280	0.5	1.6 (0.056)	2.6 (0.031)	1.2 (0.04)	16 (0.45)	22 (0.22)	2.7 (0.046)	1.3 (0.052)	0.71 (0.1)	0.2 (0.00047)	0.77 (0.4)
Cumene	10000	2500	NA	0.78 (0.062)	8.2 (0.079)	NA	NA	NA	NA	NA	0.0044 (0.00094)	700 (4)
1,2-Dibromoethane	3.7	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	85	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl Benzene	880	70	NA	0.025 J (0.062)	0.13 (0.079)	NA	NA	NA	NA	NA	ND (0.00094)	0.13 J (0.8)
Methyl tert-butyl ether	8500	2	NA	ND (0.12)	ND (0.16)	NA	NA	NA	NA	NA	ND (0.0019)	ND (1.6)
Toluene	10000	100	NA	0.089 (0.062)	0.44 (0.079)	NA	NA	NA	NA	NA	0.0048 (0.00094)	ND (0.8)
1,2,4-Trimethylbenzene	4700	300	NA	0.043 J (0.12)	0.8 (0.16)	NA	NA	NA	NA	NA	ND (0.0019)	ND (1.6)
1,3,5-Trimethylbenzene	4700	93	NA	0.018 J (0.12)	0.63 (0.16)	NA	NA	NA	NA	NA	ND (0.0019)	ND (1.6)
Xylenes (total)	7900	1000	NA	0.27 (0.062)	0.53 (0.079)	NA	NA	NA	NA	NA	ND (0.00094)	0.46 J (0.8)
Semivolatile Organic Compounds												
Anthracene	190000	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	130	340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	91	46	NA	1.1 (0.8)	0.58 J (0.71)	NA	NA	NA	NA	NA	ND (0.15)	0.83 (0.17)
Benzo(b)fluoranthene	76	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190000	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	760	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	130000	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	76	18000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	66	25	NA	0.36 (0.2)	2.2 (0.18)	NA	NA	NA	NA	NA	0.032 J (0.037)	1.6 (0.042)
Phenanthrene	190000	10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	96000	2200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Lead	1000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H6
Summary of BDH Soil Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Res Direct Contact with Soil MSC	Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC	GPU767-01	GPU767-02	GPU767-03	GPU767-04	GPU767-05	GPU767-06	GPU767-07
Field Sample ID			GPU767-01-SS01	GPU767-02-SS01	GPU767-03-SS01	GPU767-04-SS01	GPU767-05-SS01	GPU767-06-SS01	GPU767-07-SS01
Collection Depth (ft bgs)			3.0 - 3.5	4.5 - 5.0	4.5 - 5.0	4.5 - 5.0	4.0 - 4.5	3.0 - 3.5	3.0 - 3.5
Sample Method			Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date			8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022	8/15/2022
Comments									
Physical Properties									
pH	--	--	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds									
Benzene	280	0.5	ND (0.00069)	0.00007 J (0.00008)	0.071 (0.034)	0.021 J (0.036)	0.044 (0.029)	ND (0.00047)	ND (0.001)
Cumene	10000	2500	0.0011 J (0.0014)	0.0093 (0.00018)	1.6 (0.067)	4.8 (0.071)	24 (0.24)	0.001 (0.00094)	0.00049 J (0.002)
1,2-Dibromoethane	3.7	0.005	ND (0.00069)	ND (0.00008)	ND (0.00048)	ND (0.036)	ND (0.029)	ND (0.00047)	ND (0.001)
1,2-Dichloroethane	85	0.5	ND (0.0014)	ND (0.00018)	ND (0.00095)	ND (0.071)	ND (0.059)	ND (0.00094)	ND (0.002)
Ethyl Benzene	880	70	ND (0.0014)	0.00016 J (0.00018)	0.03 J (0.067)	0.047 J (0.071)	0.12 (0.059)	ND (0.00094)	ND (0.002)
Methyl tert-butyl ether	8500	2	ND (0.0028)	ND (0.00035)	ND (0.0019)	ND (0.14)	ND (0.12)	ND (0.0019)	ND (0.004)
Toluene	10000	100	ND (0.0014)	0.00018 (0.00018)	0.052 J (0.067)	0.17 (0.071)	0.062 (0.059)	ND (0.00094)	ND (0.002)
1,2,4-Trimethylbenzene	4700	300	ND (0.0028)	0.00027 J (0.00035)	0.032 J (0.13)	0.037 J (0.14)	0.075 J (0.12)	ND (0.0019)	ND (0.004)
1,3,5-Trimethylbenzene	4700	93	ND (0.0028)	0.0001 J (0.00035)	0.016 J (0.13)	ND (0.14)	0.017 J (0.12)	ND (0.0019)	ND (0.004)
Xylenes (total)	7900	1000	ND (0.0014)	0.00037 J (0.00018)	0.071 J (0.067)	0.14 (0.071)	0.21 J (0.059)	ND (0.00094)	ND (0.002)
Semivolatile Organic Compounds									
Anthracene	190000	350	ND (0.11)	0.058 J (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	0.053 J (0.1)	ND (0.1)
Benzo(a)anthracene	130	340	0.044 J (0.11)	0.12 (0.12)	ND (0.12)	0.037 J (0.12)	ND (0.11)	0.33 (0.1)	ND (0.1)
Benzo(a)pyrene	91	46	0.07 J (0.15)	0.14 J (0.16)	ND (0.16)	0.049 J (0.16)	ND (0.15)	0.42 (0.14)	ND (0.14)
Benzo(b)fluoranthene	76	170	0.1 J (0.11)	0.15 (0.12)	ND (0.12)	0.054 J (0.12)	ND (0.11)	0.56 (0.1)	ND (0.1)
Benzo(g,h,i)perylene	190000	180	0.076 J (0.15)	0.077 J (0.16)	ND (0.16)	0.064 J (0.16)	0.025 J (0.15)	0.29 (0.14)	ND (0.14)
Chrysene	760	230	0.046 J (0.11)	0.12 (0.12)	ND (0.12)	0.093 J (0.12)	0.024 J (0.11)	0.38 (0.1)	ND (0.1)
Fluorene	130000	3800	ND (0.19)	0.085 J (0.2)	ND (0.2)	ND (0.19)	ND (0.18)	0.03 J (0.18)	ND (0.17)
Indeno(1,2,3-cd)pyrene	76	18000	0.077 J (0.15)	0.091 J (0.16)	ND (0.16)	ND (0.16)	ND (0.15)	0.35 (0.14)	ND (0.14)
Naphthalene	66	25	ND (0.19)	0.048 J (0.2)	ND (0.2)	ND (0.19)	ND (0.18)	0.068 J (0.18)	ND (0.17)
Phenanthrene	190000	10000	ND (0.11)	0.24 (0.12)	ND (0.12)	ND (0.12)	ND (0.11)	0.19 (0.1)	ND (0.1)
Pyrene	96000	2200	0.032 J (0.11)	0.18 (0.12)	ND (0.12)	0.09 J (0.12)	0.022 J (0.11)	0.34 (0.1)	ND (0.1)
Tetraethylene Glycol	--	--	NA	NA	NA	NA	NA	NA	NA
Metals									
Lead	1000	450	380 (2.2)	115 (2.3)	72 (2.3)	121 (2.22)	12.5 (2.23)	688 (2.05)	87 (2.01)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 None concentrations exceed the Non-Res Direct Contact with Soil MSC.
3 Underlined concentrations exceed the Non-Res Used Aquifer (TDS ≤ 2500) Soil-to-GW MSC.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H7
Summary of BDH Soil QAQC Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	TB-071822	FB-071822-01	FB-071822-02	FB-071822-3	FB-071822-4	TB-080122	FB-080122-1	FB-080122-2	FB-080122-3	FB-080122-4	TB-080222	FB-080222-1	FB-080222-2
Sample Date	7/18/2022	7/18/2022	7/18/2022	7/18/2022	7/18/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	8/1/2022	8/2/2022	8/2/2022	8/2/2022
Comments	Trip Blank	Field Blank	Field Blank	Field Blank	Field Blank	Trip Blank	Field Blank	Field Blank	Field Blank	Field Blank	Trip Blank	Field Blank	Field Blank
Physical Properties													
pH [SU]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds													
Benzo(a)anthracene	NA	NA	NA	ND (0.05)	ND (0.05)	NA	NA	NA	0.02 J (0.05)	ND (0.05)	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	ND (0.05)	ND (0.05)	NA	NA	NA	0.01 J (0.05)	ND (0.05)	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	ND (0.1)	ND (0.1)	NA	NA	NA	0.02 J (0.1)	ND (0.1)	NA	NA	NA
Fluorene	NA	NA	NA	ND (0.1)	ND (0.1)	NA	NA	NA	ND (0.1)	ND (0.1)	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	ND (0.1)	ND (0.1)	NA	NA	NA	0.05 J (0.1)	ND (0.1)	NA	NA	NA
Phenanthrene	NA	NA	NA	ND (0.05)	ND (0.05)	NA	NA	NA	0.03 J (0.05)	ND (0.05)	NA	NA	NA
Metals	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	NA	NA

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H7
Summary of BDH Soil QAQC Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	FB-080222-3	FB-080222-4	TB-080322	FB-080322-1	FB-080322-2	TB-081522	FB-081522	TB-221222-1	TB-230104-1
Sample Date	8/2/2022	8/2/2022	8/3/2022	8/3/2022	8/3/2022	8/15/2022	8/15/2022	12/22/2022	1/4/2023
Comments	Field Blank	Field Blank	Trip Blank	Field Blank	Field Blank	Trip Blank	Field Blank	Trip Blank	Trip Blank
Physical Properties									
pH [SU]	7	6.8	NA	6.1	6.3	NA	NA	NA	NA
Volatile Organic Compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Compounds									
Benzo(a)anthracene	ND (0.05)	0.02 J (0.05)	NA	ND (0.05)	ND (0.05)	NA	ND (0.05)	NA	NA
Benzo(b)fluoranthene	ND (0.05)	ND (0.05)	NA	ND (0.05)	ND (0.05)	NA	0.02 J (0.05)	NA	NA
Benzo(g,h,i)perylene	ND (0.1)	ND (0.1)	NA	ND (0.1)	ND (0.1)	NA	ND (0.1)	NA	NA
Fluorene	ND (0.1)	ND (0.1)	NA	ND (0.1)	ND (0.1)	NA	0.06 J (0.1)	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	0.02 J (0.1)	NA	NA
Naphthalene	ND (0.1)	ND (0.1)	NA	ND (0.1)	ND (0.1)	NA	ND (0.1)	NA	NA
Phenanthrene	ND (0.05)	ND (0.05)	NA	ND (0.05)	ND (0.05)	NA	0.04 J (0.05)	NA	NA
Metals	ND	ND	NA	ND	ND	NA	ND	NA	NA

Notes:
1 All concentrations reported in ug/L (ppb); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H8
Summary of BDH Groundwater Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Residential	TG07-MW-01	TG07-MW-01	TG07-MW-02	TG07-MW-02	TG07-MW-03	TG07-MW-03	TG07-MW-04	TG07-MW-04	TG07-MW-05
Field Sample ID	Groundwater	TG07-MW-01-230105	TG07-MW-01-230208	TG07-MW-02-230104	TG07-MW-02-230208	TG07-MW-03-230104	TG07-MW-03-230208	TG07-MW-04-230105	TG07-MW-04-230208	TG07-MW-05-230105
Sample Method	Used Aquifer	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Sample Date	(TDS ≤ 2500)	1/5/2023	2/8/2023	1/4/2023	2/8/2023	1/4/2023	2/8/2023	1/5/2023	2/8/2023	1/5/2023
Comments	MSC									
Volatile Organic Compounds										
Benzene	5	ND (0.5)	ND (0.5)	17 (0.5)	19 (0.5)	0.36 J (0.5)	0.23 J (0.5)	36 (1)	64 (2)	11000 (50)
Cumene	3500	0.34 J (0.5)	ND (0.5)	67 (0.5)	30 (0.5)	4 (0.5)	2.4 (0.5)	290 (1)	360 (2)	7200 (50)
1,2-Dibromoethane	0.05	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
1,2-Dichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (1)	ND (2)	ND (50)
Ethyl Benzene	700	ND (0.5)	ND (0.5)	0.42 J (0.5)	0.65 (0.5)	ND (0.5)	0.23 J (0.5)	1.9 (1)	2.7 (2)	34 J (50)
Methyl tert-butyl ether	20	ND (1)	ND (1)	0.36 J (1)	0.35 J (1)	ND (1)	ND (1)	ND (2)	ND (4)	ND (100)
Toluene	1000	ND (0.75)	0.31 J (0.75)	1.4 (0.75)	3.7 (0.75)	0.23 J (0.75)	0.89 (0.75)	3.8 (1.5)	4.6 (3)	200 (75)
1,2,4-Trimethylbenzene	530	0.25 J (2.5)	ND (2.5)	0.5 J (2.5)	1 J (2.5)	3.4 (2.5)	2.8 (2.5)	1.4 J (5)	ND (10)	30 J (250)
1,3,5-Trimethylbenzene	530	ND (2.5)	ND (2.5)	0.24 J (2.5)	0.3 J (2.5)	ND (2.5)	ND (2.5)	0.72 J (5)	ND (10)	ND (250)
Xylenes (total)	10000	ND (1)	ND (1)	1.53 J (1)	3.4 J (1)	1.22 J (1)	1.55 J (1)	6.7 J (2)	5.7 J (4)	91 J (100)
Semivolatile Organic Compounds										
Anthracene	66	0.05 J (0.1)	0.02 J (0.1)	0.24 (0.1)	0.13 (0.1)	0.1 (0.1)	0.09 J (0.1)	0.43 (0.1)	0.33 (0.1)	0.27 (0.1)
Benzo(a)anthracene	3.9	0.08 (0.05)	0.05 J (0.05)	0.11 (0.05)	0.09 (0.05)	0.04 J (0.05)	0.03 J (0.05)	0.14 (0.05)	0.1 (0.05)	0.07 (0.05)
Benzo(a)pyrene	0.2	0.02 J (0.1)	0.02 J (0.1)	0.07 J (0.1)	0.09 J (0.1)	ND (0.1)	ND (0.1)	0.07 J (0.1)	0.06 J (0.1)	0.04 J (0.1)
Benzo(b)fluoranthene	1.2	0.02 J (0.05)	0.02 J (0.05)	0.07 (0.05)	0.08 (0.05)	ND (0.05)	0.01 J (0.05)	0.07 (0.05)	0.05 J (0.05)	0.03 J (0.05)
Benzo(g,h,i)perylene	0.26	0.01 J (0.1)	ND (0.1)	0.04 J (0.1)	0.06 J (0.1)	ND (0.1)	ND (0.1)	0.02 J (0.1)	0.02 J (0.1)	ND (0.1)
Chrysene	1.9	0.03 J (0.1)	0.02 J (0.1)	0.07 J (0.1)	0.09 J (0.1)	ND (0.1)	0.02 J (0.1)	0.11 (0.1)	0.09 J (0.1)	0.04 J (0.1)
Fluorene	1900	0.13 (0.1)	0.02 J (0.1)	2.2 (0.1)	0.83 (0.1)	0.58 (0.1)	0.41 (0.1)	4.8 (0.1)	5.6 (0.1)	2.7 (0.1)
Indeno(1,2,3-cd)pyrene	2.3	ND (0.1)	ND (0.1)	0.04 J (0.1)	0.06 J (0.1)	ND (0.1)	ND (0.1)	0.02 J (0.1)	0.02 J (0.1)	0.01 J (0.1)
Naphthalene	100	ND (0.1)	ND (0.1)	0.9 (0.1)	0.33 (0.1)	0.13 (0.1)	0.13 (0.1)	ND (0.1)	1.1 (0.1)	17 (0.1)
Phenanthrene	1100	0.2 (0.05)	0.03 J (0.05)	1.8 (0.05)	0.83 (0.05)	0.63 (0.05)	0.43 (0.05)	4.6 (0.05)	4.4 (0.05)	2.4 (0.05)
Pyrene	130	0.14 (0.1)	0.07 J (0.1)	0.36 (0.1)	0.26 (0.1)	0.11 (0.1)	0.11 (0.1)	0.42 (0.1)	0.31 (0.1)	0.22 (0.1)
Metals										
Lead	5	0.593 J (1)	0.6628 J (1)	7.913 (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)

Notes:
1 All concentrations reported in ug/L (ppb);
2 Underlined oncentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
J - Estimated Concentration

Table H8
Summary of BDH Groundwater Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, Pennsylvania

Location	Non-Residential	TG07-MW-05	TG07-MW-05	TG07-MW-07	TG07-MW-08	TG07-MW-08
Field Sample ID	Groundwater	TG07-MW-05-230209	TG07-MW-05-230209D	TG07-MW-07-230106	TG07-MW-08-230105	TG07-MW-08-230208
Sample Method	Used Aquifer	Grab	Grab	Grab	Grab	Grab
Sample Date	(TDS ≤ 2500)	2/9/2023	2/9/2023	1/6/2023	1/5/2023	2/8/2023
Comments	MSC		Field Duplicate			
Volatile Organic Compounds						
Benzene	5	17000 (100)	17000 (100)	240000 (1000)	ND (12)	ND (20)
Cumene	3500	8400 (100)	8400 (100)	5300 (200)	4400 (12)	4600 (20)
1,2-Dibromoethane	0.05	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
1,2-Dichloroethane	5	ND (100)	130 (100)	ND (200)	ND (12)	ND (20)
Ethyl Benzene	700	ND (100)	ND (100)	360 (200)	ND (12)	ND (20)
Methyl tert-butyl ether	20	ND (200)	ND (200)	ND (400)	ND (25)	ND (40)
Toluene	1000	350 (150)	340 (150)	27000 (300)	ND (19)	ND (30)
1,2,4-Trimethylbenzene	530	ND (500)	ND (500)	220 J (1000)	ND (62)	ND (100)
1,3,5-Trimethylbenzene	530	ND (500)	ND (500)	ND (1000)	ND (62)	ND (100)
Xylenes (total)	10000	ND (200)	ND (200)	1670 J (400)	ND (25)	ND (40)
Semivolatile Organic Compounds						
Anthracene	66	0.22 (0.1)	0.26 (0.1)	0.25 (0.1)	0.24 (0.1)	0.18 (0.1)
Benzo(a)anthracene	3.9	0.05 J (0.05)	0.05 J (0.05)	0.12 J (0.25)	0.18 (0.05)	0.12 (0.05)
Benzo(a)pyrene	0.2	0.03 J (0.1)	0.03 J (0.1)	0.07 J (0.1)	0.02 J (0.1)	0.06 J (0.1)
Benzo(b)fluoranthene	1.2	0.03 J (0.05)	0.03 J (0.05)	0.04 J (0.05)	0.03 J (0.05)	0.06 (0.05)
Benzo(g,h,i)perylene	0.26	ND (0.1)	ND (0.1)	0.01 J (0.1)	ND (0.1)	0.03 J (0.1)
Chrysene	1.9	0.03 J (0.1)	0.03 J (0.1)	ND (0.5)	0.07 J (0.1)	0.1 (0.1)
Fluorene	1900	2.7 (0.1)	3.1 (0.1)	2 (0.1)	2.9 (0.1)	1.9 (0.1)
Indeno(1,2,3-cd)pyrene	2.3	0.01 J (0.1)	0.02 J (0.1)	0.02 J (0.1)	0.01 J (0.1)	0.03 J (0.1)
Naphthalene	100	19 (0.1)	21 (0.1)	130 (0.5)	3.1 (0.1)	1.6 (0.1)
Phenanthrene	1100	2 (0.05)	2.3 (0.05)	2.6 (0.05)	1.8 (0.05)	1.2 (0.05)
Pyrene	130	0.15 (0.1)	0.16 (0.1)	0.3 (0.1)	0.86 (0.1)	0.69 (0.1)
Metals						
Lead	5	0.7672 J (1)	0.6277 J (1)	ND (1)	ND (1)	ND (1)

Notes:
1 All concentrations reported in ug/L (ppb);
2 Underlined oncentrations exceed the Non-Residential Groundwater Used Aquifer (TDS ≤ 2500) MSC.

Abbreviations:
ND - Not Detected
J - Estimated Concentration

Table H9

Summary of BDH Groundwater QAQC Analytical Results

Tank Group 07

Bellwether District Holdings, LLC, Philadelphia, PA

Location	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC	QAQC
Field Sample ID	**FB-230104-2**	**TB-230104-2**	**TB-230106-2**	**FB-230209-1**	**FB-230209-2**	**TB-230209-1**	**TB-230209-2**
Sample Date	**1/4/2023**	**1/4/2023**	**1/6/2023**	**2/9/2023**	**2/9/2023**	**2/9/2023**	**2/9/2023**
Comments	**Field Blank**	**Trip Blank**	**Trip Blank**	**Field Blank**	**Field Blank**	**Trip Blank**	**Trip Blank**
Volatile Organic Compounds							
Ethyl Benzene	ND (0.5)	ND (0.5)	ND (0.5)	0.77 (0.5)	0.91 (0.5)	ND (0.5)	ND (0.5)
Toluene	ND (0.75)	ND (0.75)	ND (0.75)	1.4 (0.75)	1.7 (0.75)	ND (0.75)	ND (0.75)
Xylenes (total)	ND (1)	ND (1)	ND (1)	4.4 (1)	4.7 (1)	ND (1)	ND (1)
Semivolatile Organic Compounds							
Benzo(a)anthracene	0.04 J (0.05)	NA	NA	ND (0.05)	ND (0.05)	NA	NA
Naphthalene	0.09 J (0.1)	NA	NA	0.07 J (0.1)	0.11 (0.1)	NA	NA
Metals	ND	NA	NA	ND	ND	NA	NA

Notes:

1 All concentrations reported in ug/L (ppb); detection limits in parentheses.

2 Only compounds with at least one detection are shown.

Abbreviations:

ND - Not Detected

NA - Not Analyzed

J - Estimated Concentration

Table J10
Summary of BDH LNAPL Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

	Location	TG07-MW-06	TG07-MW-07
	Field Sample ID	TG07-MW-06-230104	TG07-MW-07-230209
	Sample Date	1/4/2023	2/9/2023
	Comments		
Volatile Organic Compounds			
	Benzene	134 J (504)	20200 (461)
	Butylbenzene	286 J (504)	468 (461)
	sec-Butylbenzene	201 J (504)	304 J (461)
	tert-Butylbenzene	61.2 J (504)	106 J (461)
	Cumene	266 J (504)	47100 (1840)
	Cyclohexane	4510 (504)	2320 (461)
	Cyclopentane	383 J (504)	626 (461)
	p-Cymene	130 J (504)	813 (461)
	m-Diethyl benzene	140 J (504)	949 (461)
	1,2-Diethylbenzene	ND (504)	481 (461)
	1,3-Dimethyl-2-ethylbenzene	90.9 J (504)	372 J (461)
	1,4-Dimethyl-2-ethylbenzene	178 J (504)	1740 (461)
	1,2-Dimethyl-4-ethylbenzene	282 J (504)	2420 (461)
	1,3-Dimethyl-4-ethylbenzene	208 J (504)	2210 (461)
	2,2-Dimethylbutane	447 J (504)	198 J (461)
	2,3-Dimethyl-butane	898 (504)	1480 (461)
	cis-1,2-Dimethylcyclohexane	708 (504)	1890 (461)
	trans-1,2-Dimethylcyclohexane	1780 (504)	2170 (461)
	trans-1,4-Dimethylcyclohexane	1280 (504)	1660 (461)
	cis-1,3-Dimethylcyclopentane	1340 (504)	1890 (461)
	2,3-Dimethylheptane	683 (504)	2950 (461)
	2,5-Dimethylheptane	986 (504)	3210 (461)
	3,3-Dimethylheptane	113 J (504)	155 J (461)
	3,4-Dimethylheptane	710 (504)	1250 (461)
	3,5-Dimethylheptane	157 J (504)	582 (461)
	2,2-Dimethylhexane	ND (504)	207 J (461)
	2,3-Dimethylhexane	523 (504)	3250 (461)
	2,4-Dimethylhexane	656 (504)	3360 (461)
	2,5-Dimethylhexane	594 (504)	4450 (461)
	2,6-Dimethylnaphthalene	297 (2.36)	1260 (2.69)
	3,3-Dimethyloctane	167 J (504)	278 J (461)
	2,2-Dimethylpentane	282 J (504)	209 J (461)
	2,3-Dimethylpentane	1130 (504)	3460 (461)
	2,4-Dimethylpentane	530 (504)	2190 (461)
	3,3-Dimethylpentane	217 J (504)	239 J (461)
	Ethyl Benzene	555 (504)	1750 (461)
	1-Ethyl-3-methyl-benzene	888 (504)	3920 (461)
	Ethylcyclopentane	626 (504)	1570 (461)
	3-Ethylhexane	654 (504)	870 (461)
	5-Ethyl-m-xylene	316 J (504)	2500 (461)
	3-Ethyl-o-xylene	114 J (504)	1050 (461)
	3-Ethylpentane	375 J (504)	568 (461)
	4-Ethyltoluene	322 J (504)	2170 (461)
	Heptane	45600 (504)	9050 (461)
	1-Heptene/trans-1,2-DMCP	2040 (1010)	3400 (922)
	Hexane	23000 (504)	3970 (461)
	1-Hexene	ND (504)	79.3 J (461)
	cis-2-Hexene	ND (504)	88.8 J (461)
	trans-2-Hexene	ND (504)	125 J (461)
	Hexylbenzene	129 J (504)	164 J (461)
	Indane	37.8 J (504)	603 (461)
	Indene	ND (504)	93.9 J (461)
	Isobutylbenzene	122 J (504)	181 J (461)
	Isodecane	2840 (504)	3590 (461)
	Isopentane	2750 (504)	488 (461)
	Isopropylcyclopentane	ND (504)	333 J (461)
	1-Methyl-2-ethylbenzene	359 J (504)	2200 (461)
	1-Methyl-2-isopropylbenzene	ND (504)	219 J (461)
	1-Methyl-2-n-propylbenzene	264 J (504)	1240 (461)
	2-Methyl-2-pentene	ND (504)	701 (461)
	1-Methyl-3-isopropylbenzene	249 J (504)	1160 (461)
	1-Methyl-3-n-propylbenzene	584 (504)	1860 (461)
	1-Methyl-4-n-Propylbenzene	216 J (504)	925 (461)
	Methylcyclohexane	12600 (504)	11100 (461)
	Methylcyclopentane	3130 (504)	3310 (461)
	2-Methylheptane	6320 (504)	8260 (461)
	3-Methylheptane	4310 (504)	4740 (461)
	4-Methylheptane	1780 (504)	2300 (461)
	2-Methylhexane	5980 (504)	4990 (461)
	3-methylhexane	5210 (504)	5670 (461)
	3-Methylnonane	2000 (504)	2520 (461)
	2-Methyloctane	3740 (504)	3810 (461)
	3-Methyloctane	2930 (504)	4850 (461)
	4-Methyloctane	1980 (504)	2850 (461)
	3-methylpentane	3760 (504)	3130 (461)
	2-Methyl-Pentane	5770 (504)	3490 (461)

Table J10
Summary of BDH LNAPL Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Location	TG07-MW-06	TG07-MW-07
Field Sample ID	TG07-MW-06-230104	TG07-MW-07-230209
Sample Date	1/4/2023	2/9/2023
Comments		
Octane	48800 (504)	9190 (461)
Pentane	7740 (504)	917 (461)
trans-2-Pentene	ND (504)	106 J (461)
Pentylbenzene	84.6 J (504)	171 J (461)
Propylbenzene	437 J (504)	732 (461)
Styrene	61.4 J (504)	ND (461)
1,2,3,5-Tetramethylbenzene	177 J (504)	2210 (461)
1,2,3,4-Tetramethylbenzene	58.9 J (504)	1680 (461)
1,2,4,5-Tetramethylbenzene	107 J (504)	1020 (461)
Toluene	1090 (504)	12800 (461)
1,2,3-Trimethylbenzene	416 J (504)	2920 (461)
1,2,4-Trimethylbenzene	1150 (504)	7470 (461)
1,3,5-Trimethylbenzene	515 (504)	3470 (461)
2,2,3-Trimethylbutane	101 J (504)	178 J (461)
2,3,5-Trimethylnaphthalene	49.5 (2.36)	181 (2.69)
2,2,3-Trimethylpentane	ND (504)	1160 (461)
2,3,3-Trimethylpentane	ND (504)	11400 (461)
2,3,4-Trimethylpentane	ND (504)	10500 (461)
Xylenes (total)	2883 J (1010)	12030 J (922)
Semivolatile Organic Compounds		
Acenaphthene	37 (2.36)	48 (2.69)
Acenaphthylene	3.55 (2.36)	12.7 (2.69)
Anthracene	39 (2.36)	24.1 (2.69)
C1-Anthracenes/Phenanthrenes	146 (2.36)	318 (2.69)
C2-Anthracenes/Phenanthrenes	97 (2.36)	292 (2.69)
C3-Anthracenes/Phenanthrenes	38 (2.36)	131 (2.69)
C4-Anthracenes/Phenanthrenes	15.2 (2.36)	43.5 (2.69)
Benzo(a)anthracene	59.6 (2.36)	9.08 (2.69)
Benzo(a)fluoranthene	8.6 (2.36)	1.54 J (2.69)
Benzo(a)pyrene	42.8 (2.36)	6.16 (2.69)
Benzo(b)fluoranthene	38.6 (2.36)	5.36 (2.69)
Benzo(b)fluorene	25.3 (2.36)	4.36 (2.69)
Benzo(e)pyrene	26.7 (2.36)	4.48 (2.69)
Benzo(g,h,i)perylene	21.5 (2.36)	3.6 (2.69)
Benzo(j+k)fluoranthene	44.2 (2.36)	4.44 (2.69)
1,1-Biphenyl	14.2 (2.36)	130 (2.69)
Carbazole	2.25 J (2.36)	9.55 (2.69)
Chrysene/Triphenylene	51.9 (2.36)	8.77 (2.69)
C1-Chrysenes	20.6 (2.36)	8 (2.69)
C2-Chrysenes	12.3 (2.36)	8.61 (2.69)
C3-Chrysenes	16.3 (2.36)	9.15 (2.69)
C4-Chrysenes	ND (2.36)	6.22 (2.69)
Dibenz(a,h+a,c)anthracene	5.99 (2.36)	1.56 J (2.69)
Dibenzofuran	22.7 (2.36)	51.8 (2.69)
Dibenzothiophene	25.9 (2.36)	72.7 (2.69)
C1-Dibenzothiophenes	67.4 (2.36)	222 (2.69)
C3-Dibenzothiophenes	41.6 (2.36)	175 (2.69)
C2-Dibenzothiophenes	69.2 (2.36)	303 (2.69)
C4-Dibenzothiophenes	14.9 (2.36)	64.7 (2.69)
Fluoranthene	179 (2.36)	28.4 (2.69)
C1-Fluoranthenes/Pyrenes	74.1 (2.36)	30.4 (2.69)
C2-Fluoranthenes/Pyrenes	25 (2.36)	21.5 (2.69)
C3-Fluoranthenes/Pyrenes	17.1 (2.36)	15.8 (2.69)
C4-Fluoranthenes/Pyrenes	9.95 (2.36)	9.51 (2.69)
Fluorene	49.8 (2.36)	86.5 (2.69)
C1-Fluorenes	379 G (2.36)	235 (2.69)
C2-Fluorenes	104 (2.36)	348 (2.69)
C3-Fluorenes	79 (2.36)	262 (2.69)
Indeno(1,2,3-cd)pyrene	22.3 (2.36)	3.42 (2.69)
Isooctane	ND (504)	15000 (461)
Tetraethyl Lead	ND (0.972)	1.04 (0.977)
1-Methylnaphthalene	185 (2.36)	1320 (1150)
2-Methylnaphthalene	335 (2.36)	2630 (1150)
Naphthalene	63.4 (2.36)	1490 (461)
C1-Naphthalenes	353 (2.36)	2080 (2.69)
C2-Naphthalenes	640 (2.36)	2570 (2.69)
C3-Naphthalenes	503 (2.36)	1890 (2.69)
C4-Naphthalenes	267 (2.36)	1050 (2.69)
Perylene	9.72 (2.36)	1.78 J (2.69)
Phenanthrene	157 (2.36)	172 (2.69)
Pyrene	147 (2.36)	28.8 (2.69)

Table J10
Summary of BDH LNAPL Analytical Results
Tank Group 07
Bellwether District Holdings, LLC, Philadelphia, PA

Location	TG07-MW-06	TG07-MW-07
Field Sample ID	TG07-MW-06-230104	TG07-MW-07-230209
Sample Date	1/4/2023	2/9/2023
Comments		
Saturated Hydrocarbons		
Decane	38100 (504)	3100 (180)
Docosane	ND (157)	21.2 J (180)
Dodecane	19700 (1260)	2250 (180)
Eiscosane	36 J (157)	ND (180)
Heneicosane	ND (157)	47.2 J (180)
Heptadecane	ND (157)	76.3 J (180)
Hexadecane	ND (157)	336 (180)
Nonadecane	232 (157)	109 J (180)
Nonane	41600 (504)	6140 (180)
Pentacosane	90.6 JC (157)	154 JC (180)
Pentadecane	16600 (1260)	752 (180)
Phytane	507 (157)	1110 (180)
Pristane	932 (157)	3000 (180)
Tetradecane	16300 (1260)	500 (180)
Tridecane	20200 (1260)	1150 (180)
2,6,10-Trimethyldodecane (1380)	1140 (157)	1800 (180)
2,6,10-Trimethylpentadecane (1650)	328 (157)	1430 (180)
2,6,10-Trimethyltridecane (1470)	535 (157)	2330 (180)
Undecane	35500 (504)	2400 (180)
Total Saturated Hydrocarbons	4820 J (157)	26700 J (180)
Petroleum Hydrocarbons		
Petroleum Hydrocarbons C9 - C44	701000 (5180)	619000 (5920)
Petroleum Biomarkers		
C30 Tricyclic Terpane-22R	ND (2.36)	0.907 J (2.69)
14A(H),17A(H)-20S-Cholestane/13B(H),17A(H)-20S-Ethyldiacholestane (S12)	0.831 J (2.36)	1.31 J (2.69)
14B(H),17B(H)-20R-Cholestane (S14)	0.65 J (2.36)	1.37 J (2.69)
14B(H),17B(H)-20S-Cholestane (S15)	0.57 J (2.36)	1.29 J (2.69)
14A(H),17A(H)-20R-Cholestane/13B(H),17A(H)-20R-Ethyldiacholestane (S17)	ND (2.36)	1.67 J (2.69)
14A,17A-20S-Methylcholestane (S20)	ND (2.36)	0.962 J (2.69)
14B,17B-20R-Methylcholestane (S22)	ND (2.36)	1.25 J (2.69)
14B,17B-20S-Methylcholestane (S23)	ND (2.36)	1.39 J (2.69)
14A,17A-20R-Methylcholestane (S24)	ND (2.36)	1.14 J (2.69)
14A(H),17A(H)-20S-Ethylcholestane (S25)	ND (2.36)	1.1 J (2.69)
14B(H),17B(H)-20R-Ethylcholestane (S26)	0.674 J (2.36)	1.66 J (2.69)
14B(H),17B(H)-20S-Ethylcholestane (S27)	ND (2.36)	0.834 J (2.69)
14A(H),17A(H)-20R-Ethylcholestane (S28)	ND (2.36)	1.03 J (2.69)
13B(H),17A(H)-20S-Diacholestane (S4)	ND (2.36)	1.43 J (2.69)
13B(H),17A(H)-20R-Diacholestane (S5)	ND (2.36)	0.973 J (2.69)
13B,17A-20S-Methyldiacholestane (S8)	ND (2.36)	0.756 J (2.69)
C29 Tricyclic Terpane-22R (T10)	ND (2.36)	0.85 J (2.69)
18A-22,29,30-Trisnorneohopane-TS (T11)	ND (2.36)	1.29 J (2.69)
C30 Tricyclic Terpane-22S (T11a)	ND (2.36)	0.852 J (2.69)
17A(H)-22,29,30-Trisnorhopane-TM (T12)	ND (2.36)	1.88 J (2.69)
30-Norhopane (T15)	ND (2.36)	3.47 (2.69)
18A(H)&18B(H)-Oleananes (T18)	ND (2.36)	1.14 J (2.69)
Hopane (T19)	ND (2.36)	3.87 (2.69)
Moretane (T20)	ND (2.36)	3 G (2.69)
30-Homohopane-22S (T21)	ND (2.36)	1.68 J (2.69)
30-Homohopane-22R (T22)	ND (2.36)	1.24 J (2.69)
30,31-Bishomohopane-22S (T26)	ND (2.36)	3.59 G (2.69)
30,31-Bishomohopane-22R (T27)	ND (2.36)	1.01 J (2.69)
Tetrakishomohopane-22S (T32)	ND (2.36)	3.64 (2.69)
C23 Tricyclic Terpane (T4)	2.55 (2.36)	7.81 (2.69)
C24 Tricyclic Terpane (T5)	1.36 J (2.36)	2.95 (2.69)
C25 Tricyclic Terpane (T6)	ND (2.36)	2.27 J (2.69)
C26 Tricyclic Terpane-22S (T6B)	ND (2.36)	0.974 J (2.69)
C26,20R+C27,20S-triaromatic steroid (TAS1)	2.07 J (2.36)	2.29 J (2.69)
C28,20S-triaromatic steroid (TAS2)	1.33 J (2.36)	1.37 J (2.69)
C27,20R-triaromatic steroid (TAS3)	2 J (2.36)	1.8 J (2.69)
C28,20R-triaromatic steroid (TAS4)	1.28 J (2.36)	0.984 J (2.69)
Physical Properties		
Density [g/mL]	0.862 (0.001)	0.823 (0.001)

Notes:
1 All concentrations reported in mg/kg (ppm); detection limits in parentheses.
2 Only compounds with at least one detection are shown.

Abbreviations:
ND - Not Detected
NA - Not Analyzed
J - Estimated Concentration

Table H11
Quality Control Methodology
Bellwether District Holdings, LLC, Philadelphia, PA

Multiple VOC Runs Data Quality	Solution
If the surrogate recoveries for one run are **within acceptance criteria** and the other run has **3-4 surrogates outside of acceptance criteria**:	The run with surrogate recoveries within acceptance criteria is selected as reportable.
If the surrogate recoveries for one run are **within acceptance criteria** and has some **detections** and the other run has **1-2 surrogates outside of acceptance criteria**:	The run with surrogate recoveries within acceptance criteria is selected as reportable.
If one run has surrogate recoveries **within acceptance critera** but is **non-detect** and the other run has **1-2 surrogates outside of acceptance** criteria but has **detections**:	The run with detections is selected as reportable and the run with non-detects is not reported.
If both runs have **detections** and **surrogate recoveries outside of acceptance criteria**:	The run with more surrogates recoveries outside acceptance criteria is not reported and the run with fewer surrogate recoveries outside of acceptance criteria is selected as reportable.
If one run has surrogate recoveries **outside of acceptance critera** but is **non-detect** and the other run has **1-2 more surrogates outside of acceptance** criteria but has **detections**:	The run with detections is selected as reportable and the run with non-detects is not reported.
If both runs have the **same number of surrogates** with recovery outside the acceptance criteria:	If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable .
If two VOC runs are reported and there are no QC issues for both runs:	If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable .

Table H12
Quality Control Checklist
Bellwether District Holdings, LLC, Philadelphia, PA

	Keyfile-Related			EDD-Related										
								Multiple Results						
SDG	Check Lab Login	Check Keyfile	COC/Field Notes Uploaded	Check Sample IDs	Check Analyte List Reported	Review EDD for Issues	Dates, Matrix and Sample	Reported	Surrogate Recovery	Data Qualifiers	Reasonable Limits	Other	Resolved	Check for Concerning Qualifiers	Comments
L2238159	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2238160	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2241030	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2241031	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2241031-01 (GPR1116-05-SS01): VOCs reported for three runs. The IS responses for chlorobenzene-d5 (44%) and 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (146%) and 4-bromofluorobenzene (410%) were outside the acceptance criteria; however, re-analysis achieved the following result: 1,2-dichloroethane-d4 (148%). The run with surrogate recoveries within acceptance criteria is selected as reportable. The low runs are not reportable and the high run is reported. L2241031-07 (GPR1116-11-SS01): VOCs reported for two runs. The IS responses for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (581%) were outside the acceptance criteria due to obvious interferences. The low run is not reportable and the high run is reported.
L2241290	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2241291	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2241291-01 (GPR494-01-SS01): VOCs reported for two runs. The IS response for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (153%) were outside the acceptance criteria due to obvious interferences. The run with surrogate recoveries within acceptance criteria is selected as reportable. The low runs are not reportable and the high run is reported. L2241291-02 (GPR494-02-SS01): VOCs reported for two runs. The IS response for 1,4-dichlorobenzene-d4 (47%) and the surrogate recovery for 4-bromofluorobenzene (207%) were outside the acceptance criteria due to obvious interferences. The run with surrogate recoveries within acceptance criteria is selected as reportable. The low runs are not reportable and the high run is reported. L2241291-04 (GPR494-04-SS01): VOCs reported for two runs. The IS response for 1,4-dichlorobenzene-d4 (33%) and the surrogate recoveries for toluene-d8 (133%) and 4-bromofluorobenzene (254%) were outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (44%) and 4-bromofluorobenzene (171%). The run with more surrogates recoveries outside acceptance criteria is not reported and the run with fewer surrogate recoveries outside of acceptance criteria is selected as reportable. Both runs were low. L2241291-08 (GPR494-08-SS01): VOCs reported for two runs. The surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (36%) and 4-bromofluorobenzene (134%). If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
L2241635	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2241635-03 (GPR794-03SS01): VOCs reported for two runs. The IS responses for chlorobenzene-d5 (48%) and 1,4-dichlorobenzene-d4 (42%) and the surrogate recoveries for 1,2-dichloroethane-d4 (42%) and dibromofluoromethane (51%) were outside the acceptance criteria due to obvious interferences. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
L2243874	Pass		Pass	Pass	Pass	Pass		Yes	Yes	Yes	Yes	Yes	Yes		L2243874-03 (GPU767-03-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
680-223928-1	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	

Table H12
Quality Control Checklist
Bellwether District Holdings, LLC, Philadelphia, PA

	Keyfile-Related			EDD-Related											
								Multiple Results							
SDG	Check Lab Login	Check Keyfile	COC/Field Notes Uploaded	Check Sample IDs	Check Analyte List Reported	Review EDD for Issues	Dates, Matrix and Sample	Reported	Surrogate Recovery	Data Qualifiers	Reasonable Limits	Other	Resolved	Check for Concerning Qualifiers	Comments
L2268455	Pass		Pass	Pass	Pass	Pass		Yes	Yes	Yes	Yes	Yes	Yes		L2268455-12 (GPR282-10-SS01): VOCs reported for two runs. The IS response for fluorobenzene (24%), chlorobenzene-d5 (27%), and 1,4-dichlorobenzene-d4 (27%) and surrogate recoveries for 1,2-dichloroethane-d4 (133%) and dibromofluoromethane (135%) were outside the acceptance criteria. A second low-level vial was analyzed, but no data was acquired due to instrument error. Since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. If the surrogate recoveries for one run are within acceptance criteria and has some detections and the other run has 1-2 surrogates outside of acceptance criteria, The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable. L2268455-16 (GPR284-05-SS01): VOCs reported for two runs.The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (194%); however, the sample was not re-analyzed due to coelution with an obvious interference. If the surrogate recoveries for one run are within acceptance criteria and has some detections and the other run has 1-2 surrogates outside of acceptance criteria, The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable. L2268455-17 (GPR284-07-SS01): VOCs reported for two runs. The IS response(s) for 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (131%) and 4-bromofluorobenzene (293%) were outside the acceptance criteria; however, re analysis achieved the following results: 1,4-dichlorobenzene-d4 (46%) and 4-bromofluorobenzene (196%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. The run with more surrogates recoveries outside acceptance criteria is not reported and the run with fewer surrogate recoveries outside of acceptance criteria is selected as reportable.
L2268803	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2268803-02 (GPR276-03-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (138%); however, the sample was not re-analyzed due to coelution with an obvious interference. If the surrogate recoveries for one run are within acceptance criteria and has some detections and the other run has 1-2 surrogates outside of acceptance criteria, The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
L2269124	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2269124-09 (GPR270-01-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (226%); however, the sample was not re-analyzed due to coelution with an obvious interference. If the surrogate recoveries for one run are within acceptance criteria and has some detections and the other run has 1-2 surrogates outside of acceptance criteria, The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
L2269475	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2269475-02 (GPR1101-02-SS01): VOCs reported for two runs. The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (149%); however, the sample was not re-analyzed due to coelution with an obvious interference. If the surrogate recoveries for one run are within acceptance criteria and has some detections and the other run has 1-2 surrogates outside of acceptance criteria, The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
L2272207	Pass		Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2272207-04 (TG07-MW-07-4.0-4.5): VOCs reported for two runs. The IS response for fluorobenzene (319%) and the surrogate recoveries for dibromofluoromethane (31%), 1,2-dichloroethane-d4 (139%), toluene-d8 (133%) and 4-bromofluorobenzene (466%) were outside the acceptance criteria due to obvious interferences. The run with surrogate recoveries within acceptance criteria is selected as reportable. L2272207-07 (TG07-MW-05-4.0-4.5): VOCs reported for two runs. The surrogate recoveries were outside the acceptance criteria for dibromofluoromethane (68%) and 4-bromofluorobenzene (320%); however, re-analysis on a larger dilution was required in order to quantitate the sample within the calibration range. The run with surrogate recoveries within acceptance criteria is selected as reportable.
L2300359	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2301049	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	

Table H12
Quality Control Checklist
Bellwether District Holdings, LLC, Philadelphia, PA

	Keyfile-Related			EDD-Related											
								Multiple Results							
SDG	Check Lab Login	Check Keyfile	COC/Field Notes Uploaded	Check Sample IDs	Check Analyte List Reported	Review EDD for Issues	Dates, Matrix and Sample	Reported	Surrogate Recovery	Data Qualifiers	Reasonable Limits	Other	Resolved	Check for Concerning Qualifiers	Comments
L2303552	Pass		Pass	Pass	Pass	Pass	Pass	No							
L2306962	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2307344	Pass		Pass	Pass	Pass	Pass	Pass	No						Pass	
L2328565	Pass	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	1-Methylphenanthrene (1MP) and 1-Methylphenanthrene were both reported under the same CASRN, 832-69-9. The higher of the detections is selected as reportable and the lower reporting limit is selected as reportable.
L2334089	Pass	Pass	Pass	Pass	Pass	Pass	Pass	No						Pass	
L2334803	Pass	Pass	Pass	Pass	Pass	Pass	Pass	No							
L2335425	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Pass	L2335425-16 (GPR-273-1-SS01): VOCs reported for two runs. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable. L2335425-23 (DUP-56): VOCs reported for two runs. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
L2370407	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2370894	Yes	Yes	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	L2370894-09 (GPR276-18-0.5-1.0): VOCs reported for two runs. The IS response(s) for fluorobenzene (28%), chlorobenzene-d5 (29%), and 1,4-dichlorobenzene-d4 (28%) were outside the acceptance criteria; however, re-analysis achieved the following results: fluorobenzene (23%), chlorobenzene-d5 (26%), and 1,4-dichlorobenzene-d4 (26%) and the surrogate recovery for 1,2-dichloroethane-d4 (190%). The run with surrogate recoveries within acceptance criteria is selected as reportable. Both are low runs.
L2371111	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2371365	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2371591	Yes	Yes	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	L2371591-06 (GPR270-14-2.0-2.5): VOCs reported for two runs. The IS response(s) for 1,4-dichlorobenzene-d4 (29%) and the surrogate recovery for toluene-d8 (57%), 4-bromofluorobenzene (4360%), and dibromofluoromethane (132%) were outside the acceptance criteria due to obvious interferences. The run with surrogate recoveries within acceptance criteria is selected as reportable. The high run is reported and the low run is not reportable.
L2374524	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2374526	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2420121	Yes	Yes	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
L2421516	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2421792	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2426837	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2432738	Yes	Yes	Pass	Pass	Pass	Pass	Pass	Yes	Yes	Yes	Yes	Yes	Yes	Yes	L2432738-03 (FB-061124): VOCs reported for two runs. The Field Blank has a result for isopropylbenzene present above the reporting limit. The sample was re-analyzed and did not confirm the original results. The results of both analyses are reported. If both results are detected, the higher of detections is selected as reportable; if one result is detected and one is non-detect, the detection is selected as reportable; if both results are non-detect, the lower reporting limit is selected as reportable.
L2433503	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	
L2440937	Yes	Yes	Pass	Pass	Pass	Pass	Pass	No						Yes	

Table H13
BDH Soil RPD Calculations
Bellwether District Holdings, LLC, Philadelphia, PA

Area	Location Code	Sample Name	Sample Date	Chem Group	PARAMNAME	CASRN	Total or Dissolved	RPD	Ratio	Primary Result	Primary Qualifier	Primary Limit	Duplicate Result	Duplicate Qualifier	Duplicate Limit	Average Result	Average Qualifier	Average Limit	Result Unit
Tank Group 06	GPR1047-03	GPR1047-03-SS01	12/8/2022	WQ	pH	C-006	T	21%	1.2	8.70E+00			1.07E+01			9.70E+00			su
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Benzene	71-43-2	T	3%	1.0		U	7.80E-04		U	8.00E-04		U	7.90E-04	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Cumene	98-82-8	T	0%	1.0		U	1.60E-03		U	1.60E-03		U	1.60E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	1,2-Dibromoethane	106-93-4	T	3%	1.0		U	7.80E-04		U	8.00E-04		U	7.90E-04	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	1,2-Dichloroethane	107-06-2	T	0%	1.0		U	1.60E-03		U	1.60E-03		U	1.60E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Ethyl Benzene	100-41-4	T	0%	1.0		U	1.60E-03		U	1.60E-03		U	1.60E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	3%	1.0		U	3.10E-03		U	3.20E-03		U	3.15E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Toluene	108-88-3	T	0%	1.0		U	1.60E-03		U	1.60E-03		U	1.60E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	3%	1.0		U	3.10E-03		U	3.20E-03		U	3.15E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	3%	1.0		U	3.10E-03		U	3.20E-03		U	3.15E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	VOC	Xylenes (total)	1330-20-7	T	3%	1.0		U	3.10E-03		U	3.20E-03		U	3.15E-03	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Anthracene	120-12-7	T	17%	1.2		U	1.60E-01	1.90E-01		1.60E-01	1.35E-01	J	1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Benzo(a)anthracene	56-55-3	T	149%	6.9	6.40E-02	J	1.60E-01	4.40E-01		1.60E-01	2.52E-01	J	1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Benzo(a)pyrene	50-32-8	T	119%	4.0		U	2.10E-01	8.30E-01		2.10E-01	4.68E-01	J	2.10E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	168%	11.5	6.50E-02	J	1.60E-01	7.50E-01		1.60E-01	4.08E-01	J	1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	179%	17.6	3.40E-02	J	2.10E-01	6.00E-01		2.10E-01	3.17E-01	J	2.10E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Chrysene	218-01-9	T	137%	5.4	8.90E-02	J	1.60E-01	4.80E-01		1.60E-01	2.85E-01	J	1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Fluorene	86-73-7	T	79%	2.3	6.90E-02	J	2.70E-01	1.60E-01	J	2.60E-01	1.15E-01	J	2.65E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	82%	2.4		U	2.10E-01	5.00E-01		2.10E-01	3.03E-01	J	2.10E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Naphthalene	91-20-3	T	159%	8.7	3.10E-01		5.40E-02	2.70E+00		5.20E-02	1.51E+00		5.30E-02	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Phenanthrene	85-01-8	T	70%	2.1	2.30E-01		1.60E-01	4.80E-01		1.60E-01	3.55E-01		1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	SVOC	Pyrene	129-00-0	T	79%	2.3	2.20E-01		1.60E-01	5.10E-01		1.60E-01	3.65E-01		1.60E-01	mg/kg
Tank Group 06	GPR272-10	GPR272-10-SS01	6/16/2023	INORG	Lead	7439-92-1	T	79%	2.3	3.20E+02		3.15E+00	1.39E+02		3.01E+00	2.30E+02		3.08E+00	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Benzene	71-43-2	T	99%	3.0		U	6.40E-04	1.90E-03		8.30E-04	1.11E-03	J	7.35E-04	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Cumene	98-82-8	T	200%	16046.5	4.30E-04	J	1.30E-03	6.90E+00		1.30E-01	3.45E+00	J	6.57E-02	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	1,2-Dibromoethane	106-93-4	T	26%	1.3		U	6.40E-04		U	8.30E-04		U	7.35E-04	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	1,2-Dichloroethane	107-06-2	T	27%	1.3		U	1.30E-03		U	1.70E-03		U	1.50E-03	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Ethyl Benzene	100-41-4	T	194%	66.2		U	1.30E-03	8.60E-02	J	1.30E-01	4.33E-02	J	6.57E-02	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	28%	1.3		U	2.50E-03		U	3.30E-03		U	2.90E-03	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Toluene	108-88-3	T	198%	200.0		U	1.30E-03	2.60E-01		1.30E-01	1.30E-01	J	6.57E-02	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	197%	124.0		U	2.50E-03	3.10E-01		2.60E-01	1.56E-01	J	1.31E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	190%	40.0		U	2.50E-03	1.00E-01	J	2.60E-01	5.06E-02	J	1.31E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	VOC	Xylenes (total)	1330-20-7	T	198%	168.0		U	2.50E-03	4.20E-01	J	2.60E-01	2.11E-01	J	1.31E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Anthracene	120-12-7	T	22%	1.3	2.80E-01	J	3.40E-01	3.50E-01		1.60E-01	3.15E-01	J	2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Benzo(a)anthracene	56-55-3	T	38%	1.5	5.30E-01		3.40E-01	3.60E-01		1.60E-01	4.45E-01		2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Benzo(a)pyrene	50-32-8	T	90%	2.6	6.60E-01		4.60E-01	2.50E-01		2.10E-01	4.55E-01		3.35E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	95%	2.8	7.30E-01		3.40E-01	2.60E-01		1.60E-01	4.95E-01		2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	135%	5.2	6.70E-01		4.60E-01	1.30E-01	J	2.10E-01	4.00E-01	J	3.35E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Chrysene	218-01-9	T	43%	1.5	5.70E-01		3.40E-01	3.70E-01		1.60E-01	4.70E-01		2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Fluorene	86-73-7	T	128%	4.5	1.10E-01	J	5.80E-01	5.00E-01		2.70E-01	3.05E-01	J	4.25E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Naphthalene	91-20-3	T	76%	2.2	1.70E+00		1.20E-01	7.60E-01		5.30E-02	1.23E+00		8.65E-02	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Phenanthrene	85-01-8	T	90%	2.6	5.70E-01		3.40E-01	1.50E+00		1.60E-01	1.04E+00		2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	SVOC	Pyrene	129-00-0	T	27%	1.3	6.20E-01		3.40E-01	8.10E-01		1.60E-01	7.15E-01		2.50E-01	mg/kg
Tank Group 06	GPR273-09	GPR-273-9-SS01	6/20/2023	INORG	Lead	7439-92-1	T	62%	1.9	2.93E+02		2.32E+00	1.54E+02		3.18E+00	2.24E+02		2.75E+00	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Benzene	71-43-2	T	76%	2.2		U	5.40E-04		U	1.20E-03		U	8.70E-04	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Cumene	98-82-8	T	82%	2.4	9.60E-04	J	1.10E-03		U	2.30E-03	1.06E-03	J	1.70E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	1,2-Dibromoethane	106-93-4	T	76%	2.2		U	5.40E-04		U	1.20E-03		U	8.70E-04	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	1,2-Dichloroethane	107-06-2	T	71%	2.1		U	1.10E-03		U	2.30E-03		U	1.70E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Ethyl Benzene	100-41-4	T	71%	2.1		U	1.10E-03		U	2.30E-03		U	1.70E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Methyl tert-butyl ether	1634-04-4	T	71%	2.1		U	2.20E-03		U	4.60E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Toluene	108-88-3	T	71%	2.1		U	1.10E-03		U	2.30E-03		U	1.70E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	1,2,4-Trimethylbenzene	95-63-6	T	155%	7.8	5.90E-04	J	2.20E-03		U	4.60E-03	1.45E-03	J	3.40E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	1,3,5-Trimethylbenzene	108-67-8	T	71%	2.1		U	2.20E-03		U	4.60E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	VOC	Xylenes (total)	1330-20-7	T	80%	2.3	1.96E-03	J	2.20E-03		U	4.60E-03	2.13E-03	J	3.40E-03	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Anthracene	120-12-7	T	12%	1.1	7.20E-01		1.20E-01	6.40E-01		1.40E-01	6.80E-01		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Benzo(a)anthracene	56-55-3	T	4%	1.0	2.80E+00		1.20E-01	2.90E+00		1.40E-01	2.85E+00		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Benzo(a)pyrene	50-32-8	T	16%	1.2	2.80E+00		1.60E-01	3.30E+00		1.90E-01	3.05E+00		1.75E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Benzo(b)fluoranthene	205-99-2	T	15%	1.2	3.10E+00		1.20E-01	3.60E+00		1.40E-01	3.35E+00		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Benzo(g,h,i)perylene	191-24-2	T	14%	1.2	1.30E+00		1.60E-01	1.50E+00		1.90E-01	1.40E+00		1.75E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Chrysene	218-01-9	T	12%	1.1	2.40E+00		1.20E-01	2.70E+00		1.40E-01	2.55E+00		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Fluorene	86-73-7	T	22%	1.2	4.50E-01		2.00E-01	5.60E-01		2.30E-01	5.05E-01		2.15E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Naphthalene	91-20-3	T	2%	1.0	4.20E+00		2.00E-01	4.10E+00		2.30E-01	4.15E+00		2.15E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Phenanthrene	85-01-8	T	42%	1.5	2.30E+00		1.20E-01	1.50E+00		1.40E-01	1.90E+00		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	SVOC	Pyrene	129-00-0	T	3%	1.0	3.30E+00		1.20E-01	3.20E+00		1.40E-01	3.25E+00		1.30E-01	mg/kg
Tank Group 06	GPR284-10	GPR284-10-SS01	12/6/2022	INORG	Lead	7439-92-1	T	31%	1.4	9.53E+01		2.33E+00	6.98E+01		2.72E+00	8.26E+01		2.53E+00	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Benzene	71-43-2	T	5%	1.0		U	8.20E-04		U	8.60E-04		U	8.40E-04	mg/kg

Table H13
BDH Soil RPD Calculations
Bellwether District Holdings, LLC, Philadelphia, PA

Area	Location Code	Sample Name	Sample Date	Chem Group	PARAMNAME	CASRN	Total or Dissolved	RPD	Ratio	Primary Result	Primary Qualifier	Primary Limit	Duplicate Result	Duplicate Qualifier	Duplicate Limit	Average Result	Average Qualifier	Average Limit	Result Unit
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Cumene	98-82-8	T	6%	1.1		U	1.60E-03		U	1.70E-03		U	1.65E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	1,2-Dibromoethane	106-93-4	T	5%	1.0		U	8.20E-04		U	8.60E-04		U	8.40E-04	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	1,2-Dichloroethane	107-06-2	T	6%	1.1		U	1.60E-03		U	1.70E-03		U	1.65E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Ethyl Benzene	100-41-4	T	6%	1.1		U	1.60E-03		U	1.70E-03		U	1.65E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Methyl tert-butyl ether	1634-04-4	T	6%	1.1		U	3.30E-03		U	3.50E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Toluene	108-88-3	T	6%	1.1		U	1.60E-03		U	1.70E-03		U	1.65E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	1,2,4-Trimethylbenzene	95-63-6	T	6%	1.1		U	3.30E-03		U	3.50E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	1,3,5-Trimethylbenzene	108-67-8	T	6%	1.1		U	3.30E-03		U	3.50E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	VOC	Xylenes (total)	1330-20-7	T	6%	1.1		U	3.30E-03		U	3.50E-03		U	3.40E-03	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Anthracene	120-12-7	T	46%	1.6	5.00E-01		1.40E-01	8.00E-01		1.40E-01	6.50E-01		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Benzo(a)anthracene	56-55-3	T	45%	1.6	1.20E+00		1.40E-01	1.90E+00		1.40E-01	1.55E+00		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Benzo(a)pyrene	50-32-8	T	40%	1.5	1.80E+00		1.80E-01	2.70E+00		1.90E-01	2.25E+00		1.85E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Benzo(b)fluoranthene	205-99-2	T	50%	1.7	1.80E+00		1.40E-01	3.00E+00		1.40E-01	2.40E+00		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Benzo(g,h,i)perylene	191-24-2	T	46%	1.6	1.00E+00		1.80E-01	1.60E+00		1.90E-01	1.30E+00		1.85E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Chrysene	218-01-9	T	40%	1.5	1.20E+00		1.40E-01	1.80E+00		1.40E-01	1.50E+00		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Fluorene	86-73-7	T	8%	1.1	3.80E-01		2.30E-01	4.10E-01		2.40E-01	3.95E-01		2.35E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Naphthalene	91-20-3	T	1%	1.0	7.00E+00		2.30E-01	6.90E+00		2.40E-01	6.95E+00		2.35E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Phenanthrene	85-01-8	T	29%	1.3	1.50E+00		1.40E-01	2.00E+00		1.40E-01	1.75E+00		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	SVOC	Pyrene	129-00-0	T	15%	1.2	1.20E+00		1.40E-01	1.40E+00		1.40E-01	1.30E+00		1.40E-01	mg/kg
Tank Group 06	GPR285-08	GPR285-08-SS01	12/7/2022	INORG	Lead	7439-92-1	T	28%	1.3	1.60E+02		2.76E+00	2.12E+02		2.83E+00	1.86E+02		2.80E+00	mg/kg
Tank Group 07	GPR1088-01	GPR1088-01-SS01	8/2/2022	WQ	pH	C-006	T	6%	1.1	8.50E+00			8.00E+00			8.25E+00			su
Tank Group 07	GPR1088-04	GPR1088-04-SS01	8/3/2022	WQ	pH	C-006	T	2%	1.0	6.20E+00			6.10E+00			6.15E+00			su
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Benzene	71-43-2	T	193%	60.2	5.30E-02		4.70E-02		U	8.80E-04	2.67E-02	J	2.39E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Cumene	98-82-8	T	198%	200.0	8.00E-01		9.40E-02	4.00E-03		1.80E-03	4.02E-01		4.79E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	1,2-Dibromoethane	106-93-4	T	193%	53.4		U	4.70E-02		U	8.80E-04		U	2.39E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	1,2-Dichloroethane	107-06-2	T	192%	52.2		U	9.40E-02		U	1.80E-03		U	4.79E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Ethyl Benzene	100-41-4	T	170%	12.2	2.20E-02	J	9.40E-02		U	1.80E-03	1.15E-02	J	4.79E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Methyl tert-butyl ether	1634-04-4	T	193%	54.3		U	1.90E-01		U	3.50E-03		U	9.68E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Toluene	108-88-3	T	191%	43.3	7.80E-02	J	9.40E-02		U	1.80E-03	3.95E-02	J	4.79E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	1,2,4-Trimethylbenzene	95-63-6	T	198%	205.3	7.80E-01		1.90E-01	3.80E-03		3.50E-03	3.92E-01		9.68E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	1,3,5-Trimethylbenzene	108-67-8	T	197%	158.3		U	1.90E-01	1.20E-03	J	3.50E-03	4.81E-02	J	9.68E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	VOC	Xylenes (total)	1330-20-7	T	191%	44.1	1.19E-01	J	1.90E-01	2.70E-03	J	3.50E-03	6.09E-02	J	9.68E-02	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Anthracene	120-12-7	T	87%	2.5	5.50E-02	J	1.30E-01		U	1.40E-01	6.25E-02	J	1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Benzo(a)anthracene	56-55-3	T	143%	6.0	2.40E-01		1.30E-01	4.00E-02	J	1.40E-01	1.40E-01	J	1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Benzo(a)pyrene	50-32-8	T	76%	2.2	4.00E-01		1.70E-01		U	1.80E-01	2.45E-01	J	1.75E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Benzo(b)fluoranthene	205-99-2	T	164%	10.0	4.20E-01		1.30E-01	4.20E-02	J	1.40E-01	2.31E-01	J	1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Benzo(g,h,i)perylene	191-24-2	T	161%	9.3	2.60E-01		1.70E-01	2.80E-02	J	1.80E-01	1.44E-01	J	1.75E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Chrysene	218-01-9	T	144%	6.1	2.70E-01		1.30E-01	4.40E-02	J	1.40E-01	1.57E-01	J	1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Fluorene	86-73-7	T	43%	1.6	5.60E-02	J	2.20E-01	8.70E-02	J	2.30E-01	7.15E-02	J	2.25E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Naphthalene	91-20-3	T	75%	2.2	3.50E-01		2.20E-01	1.60E-01	J	2.30E-01	2.55E-01	J	2.25E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Phenanthrene	85-01-8	T	24%	1.3	1.50E-01		1.30E-01	1.90E-01		1.40E-01	1.70E-01		1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	SVOC	Pyrene	129-00-0	T	71%	2.1	2.10E-01		1.30E-01	1.00E-01	J	1.40E-01	1.55E-01	J	1.35E-01	mg/kg
Tank Group 07	GPR1116-05	GPR1116-05-SS01	8/1/2022	INORG	Lead	7439-92-1	T	101%	3.0	6.79E+01		2.49E+00	2.06E+02		1.34E+01	1.37E+02		7.95E+00	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Benzene	71-43-2	T	195%	72.0	3.60E-02		5.20E-04		U	5.00E-04	1.81E-02	J	5.10E-04	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Cumene	98-82-8	T	8%	1.1	6.80E-03		1.00E-03	7.40E-03		9.90E-04	7.10E-03		9.95E-04	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Ethyl Benzene	100-41-4	T	1%	1.0		U	1.00E-03		U	9.90E-04		U	9.95E-04	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Methyl tert-butyl ether	1634-04-4	T	5%	1.1		U	2.10E-03		U	2.00E-03		U	2.05E-03	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Toluene	108-88-3	T	1%	1.0		U	1.00E-03		U	9.90E-04		U	9.95E-04	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	1,2,4-Trimethylbenzene	95-63-6	T	36%	1.4	2.60E-03		2.10E-03	1.80E-03	J	2.00E-03	2.20E-03	J	2.05E-03	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	1,3,5-Trimethylbenzene	108-67-8	T	5%	1.1		U	2.10E-03		U	2.00E-03		U	2.05E-03	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	VOC	Xylenes (total)	1330-20-7	T	1%	1.0	1.84E-03	J	2.10E-03	1.86E-03	J	2.00E-03	1.85E-03	J	2.05E-03	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	SVOC	Benzo(a)pyrene	50-32-8	T	24%	1.3	6.70E-02	J	1.50E-01	8.50E-02	J	1.50E-01	7.60E-02	J	1.50E-01	mg/kg
Tank Group 07	GPR1116-08	TG07-MW-03-3.0-3.5	12/21/2022	SVOC	Naphthalene	91-20-3	T	19%	1.2	8.10E-02		3.80E-02	9.80E-02		3.80E-02	8.95E-02		3.80E-02	mg/kg
Tank Group 07	GPR792-02	GPR792-02-SS01	8/2/2022	VOC	Cumene	98-82-8	T	0%	1.0	4.70E+03		4.90E+01	4.70E+03		5.90E+01	4.70E+03		5.40E+01	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Benzene	71-43-2	T	81%	2.4	2.60E+00		2.40E-02	1.10E+00		2.30E-02	1.85E+00		2.35E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Cumene	98-82-8	T	35%	1.4	2.00E+01		1.20E-01	1.40E+01		9.30E-02	1.70E+01		1.07E-01	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Ethyl Benzene	100-41-4	T	42%	1.5	3.20E-01		4.90E-02	2.10E-01		4.60E-02	2.65E-01		4.75E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	4%	1.0		U	9.70E-02		U	9.30E-02		U	9.50E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Toluene	108-88-3	T	69%	2.0	1.70E+00		4.90E-02	8.30E-01		4.60E-02	1.27E+00		4.75E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	11%	1.1	4.70E-02	J	9.70E-02	4.20E-02	J	9.30E-02	4.45E-02	J	9.50E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	6%	1.1	1.60E-02	J	9.70E-02	1.70E-02	J	9.30E-02	1.65E-02	J	9.50E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	VOC	Xylenes (total)	1330-20-7	T	31%	1.4	1.11E+00	J	9.70E-02	8.12E-01	J	9.30E-02	9.61E-01	J	9.50E-02	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	SVOC	Benzo(a)pyrene	50-32-8	T	40%	1.5	8.70E-02	J	1.40E-01	5.80E-02	J	1.40E-01	7.25E-02	J	1.40E-01	mg/kg
Tank Group 07	GPR794-09	GPR794-09-2.0-2.5	1/3/2023	SVOC	Naphthalene	91-20-3	T	30%	1.4	2.70E-01		3.60E-02	2.00E-01		3.60E-02	2.35E-01		3.60E-02	mg/kg
Tank Group 07	GPR798-04	GPR798-04-SS01	7/18/2022	VOC	Benzene	71-43-2	T	199%	421.4	1.40E+01		4.30E-01	5.90E+03		5.80E+01	2.96E+03		2.92E+01	mg/kg

Table H14
BDH Groundwater RPD Calculations
Bellwether District Holdings, LLC, Philadelphia, PA

Area	Location Code	Sample Name	Sample Date	Chem Group	PARAMNAME	CASRN	Total or Dissolved	RPD	Ratio	Primary Result	Primary Qualifier	Primary Limit	Duplicate Result	Duplicate Qualifier	Duplicate Limit	Average Result	Average Qualifier	Average Limit	Result Unit
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Benzene	71-43-2	T	0%	1.0	1.70E+01		1.00E-01	1.70E+01		1.00E-01	1.70E+01		1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Benzene	71-43-2	T	0%	1.0	1.70E+01		1.00E-01	1.70E+01		1.00E-01	1.70E+01		1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Cumene	98-82-8	T	0%	1.0	8.40E+00		1.00E-01	8.40E+00		1.00E-01	8.40E+00		1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Cumene	98-82-8	T	0%	1.0	8.40E+00		1.00E-01	8.40E+00		1.00E-01	8.40E+00		1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2-Dibromoethane	106-93-4	T	0%	1.0		U	1.00E-05		U	1.00E-05		U	1.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2-Dibromoethane	106-93-4	T	0%	1.0		U	1.00E-05		U	1.00E-05		U	1.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2-Dichloroethane	107-06-2	T	26%	1.3		U	1.00E-01	1.30E-01		1.00E-01	9.00E-02	J	1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2-Dichloroethane	107-06-2	T	26%	1.3		U	1.00E-01	1.30E-01		1.00E-01	9.00E-02	J	1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Ethyl Benzene	100-41-4	T	0%	1.0		U	1.00E-01		U	1.00E-01		U	1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Ethyl Benzene	100-41-4	T	0%	1.0		U	1.00E-01		U	1.00E-01		U	1.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	0%	1.0		U	2.00E-01		U	2.00E-01		U	2.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Methyl tert-butyl ether	1634-04-4	T	0%	1.0		U	2.00E-01		U	2.00E-01		U	2.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Toluene	108-88-3	T	3%	1.0	3.50E-01		1.50E-01	3.40E-01		1.50E-01	3.45E-01		1.50E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Toluene	108-88-3	T	3%	1.0	3.50E-01		1.50E-01	3.40E-01		1.50E-01	3.45E-01		1.50E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	0%	1.0		U	5.00E-01		U	5.00E-01		U	5.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,2,4-Trimethylbenzene	95-63-6	T	0%	1.0		U	5.00E-01		U	5.00E-01		U	5.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	0%	1.0		U	5.00E-01		U	5.00E-01		U	5.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	1,3,5-Trimethylbenzene	108-67-8	T	0%	1.0		U	5.00E-01		U	5.00E-01		U	5.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Xylenes (total)	1330-20-7	T	0%	1.0		U	2.00E-01		U	2.00E-01		U	2.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	VOC	Xylenes (total)	1330-20-7	T	0%	1.0		U	2.00E-01		U	2.00E-01		U	2.00E-01	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Anthracene	120-12-7	T	17%	1.2	2.20E-04		1.00E-04	2.60E-04		1.00E-04	2.40E-04		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Anthracene	120-12-7	T	17%	1.2	2.20E-04		1.00E-04	2.60E-04		1.00E-04	2.40E-04		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(a)anthracene	56-55-3	T	0%	1.0	5.00E-05	J	5.00E-05	5.00E-05	J	5.00E-05	5.00E-05	J	5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(a)anthracene	56-55-3	T	0%	1.0	5.00E-05	J	5.00E-05	5.00E-05	J	5.00E-05	5.00E-05	J	5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(a)pyrene	50-32-8	T	0%	1.0	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(a)pyrene	50-32-8	T	0%	1.0	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	0%	1.0	3.00E-05	J	5.00E-05	3.00E-05	J	5.00E-05	3.00E-05	J	5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(b)fluoranthene	205-99-2	T	0%	1.0	3.00E-05	J	5.00E-05	3.00E-05	J	5.00E-05	3.00E-05	J	5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	0%	1.0		U	1.00E-04		U	1.00E-04		U	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Benzo(g,h,i)perylene	191-24-2	T	0%	1.0		U	1.00E-04		U	1.00E-04		U	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Chrysene	218-01-9	T	0%	1.0	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Chrysene	218-01-9	T	0%	1.0	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	3.00E-05	J	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Fluorene	86-73-7	T	14%	1.1	2.70E-03		1.00E-04	3.10E-03		1.00E-04	2.90E-03		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Fluorene	86-73-7	T	14%	1.1	2.70E-03		1.00E-04	3.10E-03		1.00E-04	2.90E-03		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	T	67%	2.0	1.00E-05	J	1.00E-04	2.00E-05	J	1.00E-04	1.50E-05	J	1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Naphthalene	91-20-3	T	10%	1.1	1.90E-02		1.00E-04	2.10E-02		1.00E-04	2.00E-02		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Naphthalene	91-20-3	T	10%	1.1	1.90E-02		1.00E-04	2.10E-02		1.00E-04	2.00E-02		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Phenanthrene	85-01-8	T	14%	1.2	2.00E-03		5.00E-05	2.30E-03		5.00E-05	2.15E-03		5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Phenanthrene	85-01-8	T	14%	1.2	2.00E-03		5.00E-05	2.30E-03		5.00E-05	2.15E-03		5.00E-05	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Pyrene	129-00-0	T	6%	1.1	1.50E-04		1.00E-04	1.60E-04		1.00E-04	1.55E-04		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	SVOC	Pyrene	129-00-0	T	6%	1.1	1.50E-04		1.00E-04	1.60E-04		1.00E-04	1.55E-04		1.00E-04	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	INORG	Lead	7439-92-1	D	20%	1.2	7.67E-04	J	1.00E-03	6.28E-04	J	1.00E-03	6.97E-04	J	1.00E-03	MG/L
Tank Group 07	TG07-MW-05	TG07-MW-05-230209	2/9/2023	INORG	Lead	7439-92-1	D	20%	1.2	7.67E-04	J	1.00E-03	6.28E-04	J	1.00E-03	6.97E-04	J	1.00E-03	MG/L

Appendix I

Laboratory Reports and LNAPL Forensics

ANALYTICAL REPORT

Lab Number:	L2420121
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY
Project Number:	200.00135
Report Date:	04/19/24

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508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2420121
Report Date: 04/19/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2420121-01	TG06-MW02-240411	WATER	PHILADELPHIA, PA	04/11/24 13:12	04/12/24
L2420121-02	TG06-MW03-240411	WATER	PHILADELPHIA, PA	04/11/24 15:50	04/12/24
L2420121-03	TG06-MW05-240411	WATER	PHILADELPHIA, PA	04/11/24 18:00	04/12/24
L2420121-04	FB-240411	WATER	PHILADELPHIA, PA	04/11/24 17:10	04/12/24
L2420121-05	TB-240411	WATER	PHILADELPHIA, PA	04/11/24 00:00	04/12/24

Project Name:	PES REFINERY	**Lab Number:**	L2420121
Project Number:	200.00135	**Report Date:**	04/19/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY	**Lab Number:**	L2420121
Project Number:	200.00135	**Report Date:**	04/19/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2420121-05: A sample identified as "TB-240411" was received, but not listed on the Chain of Custody. At the client's request, this sample was analyzed.

Volatile Organics

L2420121-04: The pH was greater than two; however, the sample was analyzed within the method required holding time.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 04/19/24

ORGANICS

VOLATILES

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-01
Client ID: TG06-MW02-240411
Sample Location: PHILADELPHIA, PA

Date Collected: 04/11/24 13:12
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/15/24 18:26
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	115		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-04
Client ID: FB-240411
Sample Location: PHILADELPHIA, PA
Date Collected: 04/11/24 17:10
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/15/24 18:48
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	114		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-05
Client ID: TB-240411
Sample Location: PHILADELPHIA, PA

Date Collected: 04/11/24 00:00
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/18/24 17:07
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/15/24 11:30
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,04 Batch: WG1909268-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	113		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/18/24 08:57
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1910572-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2420121

Report Date: 04/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04 Batch: WG1909268-3 WG1909268-4								
Benzene	96		88		70-130	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		107		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	85		87		70-130
Dibromofluoromethane	104		108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2420121

Report Date: 04/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1910572-3 WG1910572-4								
Benzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		92		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	96		95		70-130

SEMIVOLATILES

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-01
Client ID: TG06-MW02-240411
Sample Location: PHILADELPHIA, PA

Date Collected: 04/11/24 13:12
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 04/18/24 23:08
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/18/24 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	53		41-149

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-03
Client ID: TG06-MW05-240411
Sample Location: PHILADELPHIA, PA

Date Collected: 04/11/24 18:00
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 04/18/24 23:24
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/18/24 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	68		15-120
4-Terphenyl-d14	43		41-149

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-04
Client ID: FB-240411
Sample Location: PHILADELPHIA, PA

Date Collected: 04/11/24 17:10
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 04/18/24 23:41
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/18/24 11:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	59		15-120
4-Terphenyl-d14	49		41-149

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2420121
Report Date: 04/19/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 04/18/24 21:10
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/18/24 11:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,03-04 Batch: WG1910292-1					
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	53		15-120
4-Terphenyl-d14	44		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2420121

Report Date: 04/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1910292-2 WG1910292-3								
Naphthalene	69		56		40-140	21		40
Benzo(a)pyrene	68		56		40-140	19		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	76		62		23-120
2-Fluorobiphenyl	62		51		15-120
4-Terphenyl-d14	49		41		41-149

METALS

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-01
Client ID: TG06-MW02-240411
Sample Location: PHILADELPHIA, PA
Date Collected: 04/11/24 13:12
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	04/17/24 18:43	04/19/24 09:50	EPA 3005A	1,6020B	EJF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-02
Client ID: TG06-MW03-240411
Sample Location: PHILADELPHIA, PA
Date Collected: 04/11/24 15:50
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	04/17/24 18:43	04/19/24 09:55	EPA 3005A	1,6020B	EJF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-03
Client ID: TG06-MW05-240411
Sample Location: PHILADELPHIA, PA
Date Collected: 04/11/24 18:00
Date Received: 04/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1.765		ug/l	1.000	0.3430	1	04/17/24 18:43	04/19/24 09:59	EPA 3005A	1,6020B	EJF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

SAMPLE RESULTS

Lab ID: L2420121-04
Client ID: FB-240411
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 04/11/24 17:10
Date Received: 04/12/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	04/17/24 18:43	04/19/24 10:04	EPA 3005A	1,6020B	EJF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2420121
Report Date: 04/19/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1909745-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	04/17/24 18:43	04/19/24 08:37	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2420121

Report Date: 04/19/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1909745-2								
Lead, Total	93		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2420121
Report Date: 04/19/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1909745-3 QC Sample: L2420121-01 Client ID: TG06-MW02-240411												
Lead, Total	ND	530	438.0	83		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2420121

Report Date: 04/19/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1909745-4 QC Sample: L2420121-01 Client ID: TG06-MW02-240411						
Lead, Total	ND	ND	ug/l	NC		20

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2420121
Report Date: 04/19/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2420121-01A	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-01B	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-01C	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-01D	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		PA-PAHSIM-LVI(7)
L2420121-01E	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		PB-6020T-PPB(180)
L2420121-02E	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		PB-6020T-PPB(180)
L2420121-03D	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		PA-PAHSIM-LVI(7)
L2420121-03E	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		PB-6020T-PPB(180)
L2420121-04A	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-04B	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-04C	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-04D	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		PA-PAHSIM-LVI(7)
L2420121-04E	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		PA-PAHSIM-LVI(7)
L2420121-04F	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		PB-6020T-PPB(180)
L2420121-05A	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2420121-05B	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY	**Lab Number:**	L2420121
Project Number:	200.00135	**Report Date:**	04/19/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2420121
Project Number:	200.00135	**Report Date:**	04/19/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2420121
Project Number:	200.00135	**Report Date:**	04/19/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 04/12/24

ALPHA Job #: L2420121

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PES Refinery
Project Location: Philadelphia, PA
Project #: 200.00135
Project Manager: Bill Schmidt
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene (8260B)	Benzo(a)pyrene (8270SIM)	Lead (6010B)	Naphthalene (8270SIM)	Sample Specific Comments	TOTAL # BOTTLES
420121-01	TGOL-MW02-240411	04/11/24	13:12	GW	ND	X	X	X			5
-02	TGOL-MW03-240411		15:50					X			1
-03	TGOL-MW05-240411		18:00					X	X		2
-04	FB-240411		17:10	Aq-2		X	X	X	X		6

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	V	A	P	A
Preservative	B	A	C	A

Relinquished By:	Date/Time	Received By:	Date/Time
Nicholas Dyl	04/11/24 20:10		
[signature] 4.12.24 1800		[signature]	4-12-24 1800
[signature]	4/12/24	[signature]	4/12/24 1644
		[signature]	4/12/24 2040
		[signature]	4/12/24 22:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

(rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2426837
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PESRM
Project Number:	200.00135.014.03
Report Date:	05/22/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2426837
Report Date: 05/22/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2426837-01	TG06-MW01-240514	WATER	PHILADELPHIA, PA	05/14/24 16:10	05/15/24
L2426837-02	TG06-MW02-240514	WATER	PHILADELPHIA, PA	05/14/24 13:45	05/15/24
L2426837-03	TG06-MW03-240514	WATER	PHILADELPHIA, PA	05/14/24 13:00	05/15/24
L2426837-04	TG06-MW04-240514	WATER	PHILADELPHIA, PA	05/14/24 15:10	05/15/24
L2426837-05	TG06-MW05 -240514	WATER	PHILADELPHIA, PA	05/14/24 12:00	05/15/24
L2426837-06	FB-240514	WATER	PHILADELPHIA, PA	05/14/24 12:40	05/15/24
L2426837-07	TB-240514	WATER	PHILADELPHIA, PA	05/14/24 00:00	05/15/24

Project Name:	PESRM	**Lab Number:**	L2426837
Project Number:	200.00135.014.03	**Report Date:**	05/22/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PESRM	**Lab Number:**	L2426837
Project Number:	200.00135.014.03	**Report Date:**	05/22/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2426837-01 through -07: The Client ID was specified by the client.

L2426837-07: The analyses performed were specified by the client.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative Date: 05/22/24

ORGANICS

VOLATILES

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-02
Client ID: TG06-MW02-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 13:45
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/17/24 18:50
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	103		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-04
Client ID: TG06-MW04-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 15:10
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/17/24 19:16
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	5.8		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	20		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	92		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-06
Client ID: FB-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 12:40
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/17/24 18:00
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	103		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-07
Client ID: TB-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 00:00
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/17/24 18:25
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	103		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 05/17/24 10:49
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04,06-07 Batch: WG1923463-5					
Benzene	ND		ug/l	0.50	0.16
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2426837

Report Date: 05/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04,06-07 Batch: WG1923463-3 WG1923463-4								
Benzene	98		98		70-130	0		20
1,3,5-Trimethylbenzene	96		96		64-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83		84		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	91		91		70-130

SEMIVOLATILES

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-02
Client ID: TG06-MW02-240514
Sample Location: PHILADELPHIA, PA

Date Collected: 05/14/24 13:45
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 05/21/24 18:02
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 05/19/24 08:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	74		41-149

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-05
Client ID: TG06-MW05 -240514
Sample Location: PHILADELPHIA, PA

Date Collected: 05/14/24 12:00
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 05/21/24 18:18
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 05/19/24 08:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	3.6		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	56		15-120
4-Terphenyl-d14	50		41-149

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-06
Client ID: FB-240514
Sample Location: PHILADELPHIA, PA

Date Collected: 05/14/24 12:40
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 05/21/24 18:35
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 05/19/24 08:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	82		41-149

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2426837
Report Date: 05/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 05/20/24 23:52
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 05/19/24 08:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02,05-06 Batch: WG1923040-1					
Naphthalene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	72		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2426837

Report Date: 05/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02,05-06 Batch: WG1923040-2 WG1923040-3								
Naphthalene	58		69		40-140	17		40
Benzo(a)pyrene	80		96		40-140	18		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	85		99		23-120
2-Fluorobiphenyl	66		79		15-120
4-Terphenyl-d14	67		78		41-149

METALS

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-01
Client ID: TG06-MW01-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 16:10
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5.202		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 19:41	EPA 3005A	1,6020B	WKP

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-02
Client ID: TG06-MW02-240514
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 05/14/24 13:45
Date Received: 05/15/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	11.87		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 19:45	EPA 3005A	1,6020B	WKP

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-03
Client ID: TG06-MW03-240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 13:00
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	15.23		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 19:50	EPA 3005A	1,6020B	WKP

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-05
Client ID: TG06-MW05 -240514
Sample Location: PHILADELPHIA, PA
Date Collected: 05/14/24 12:00
Date Received: 05/15/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	117.5		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 19:54	EPA 3005A	1,6020B	WKP

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

SAMPLE RESULTS

Lab ID: L2426837-06
Client ID: FB-240514
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 05/14/24 12:40
Date Received: 05/15/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 19:14	EPA 3005A	1,6020B	WKP

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2426837
Report Date: 05/22/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03,05-06 Batch: WG1922435-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/17/24 11:40	05/20/24 18:20	1,6020B	WKP

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2426837

Report Date: 05/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06 Batch: WG1922435-2								
Lead, Total	85		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2426837
Report Date: 05/22/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06 QC Batch ID: WG1922435-3 QC Sample: L2426993-01 Client ID: MS Sample												
Lead, Total	9.833	530	469.8	87		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2426837

Report Date: 05/22/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06 QC Batch ID: WG1922435-4 QC Sample: L2426993-01 Client ID: DUP Sample						
Lead, Total	9.833	14.36	ug/l	**37**	Q	20

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2426837
Report Date: 05/22/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2426837-01A	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		PB-6020T-PPB(180)
L2426837-02A	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-02B	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-02C	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-02D	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-02E	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-02F	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		PB-6020T-PPB(180)
L2426837-03A	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		PB-6020T-PPB(180)
L2426837-04A	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-04B	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-04C	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-05A	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-05B	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-05C	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		PB-6020T-PPB(180)
L2426837-06A	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-06B	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-06C	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-06D	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-06E	Amber 100ml unpreserved	A	7	7	4.8	Y	Absent		PA-PAHSIM-RVT(7)
L2426837-06F	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		PB-6020T-PPB(180)
L2426837-07A	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)
L2426837-07B	Vial HCl preserved	A	NA		4.8	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PESRM	**Lab Number:**	L2426837
Project Number:	200.00135.014.03	**Report Date:**	05/22/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PESRM	**Lab Number:**	L2426837
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Project Number:	200.00135.014.03	**Report Date:**	05/22/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PESRM	**Lab Number:**	L2426837
Project Number:	200.00135.014.03	**Report Date:**	05/22/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 5/15/24

ALPHA Job #: L2426837

Client Information

Client: Ransom Consulting
Address: 2127 Hamilton Ave
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PESRM
Project Location: Philadelphia, PA
Project #: 200.00135.014.03
Project Manager: Bill Schmidt
ALPHA Quote #: 468093

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene 8260B	1,3,5-Trimethylbenzene 8260B	Benzo(a)pyrene 8270SIM	Naphthalene 8270SIM	Lead 6010B	Sample Specific Comments	TOTAL # BOTTLES
26837-01	TG06-MW-01-240514	5/14/24	1610	Aq	AL					X		1
02	TG06-MW-02-240514		1345	Aq	AL	X		X		X		6
03	TG06-MW-03-240514		1300	Aq	AL					X		1
04	TG06-MW-04-240514		1510	Aq	AL	X	X					3
05	TG06-MW-05-230514		1200	Aq	AL				X	X		3
06	Field Blank		1240	Aq	AL	X	X	X	X	X		6
07	Trip Blank		—	Aq	AL	X	X	X	X	X		1

SAMPLE HANDLING
Filtration field
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type												
Preservative												

Relinquished By:	Date/Time	Received By:	Date/Time
Athena Zotos	5/14/24	Athena Zotos - PAL	5-15-24 0945
Paul Margella	5-15-24 1500	Paul Margella	5/15/24 1645
Paul Margella	5/15/24 5/15/24 2345		5/15/24 2142 5/15/24 23:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2433503
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PESRM
Project Number:	200.00135.014.03
Report Date:	06/21/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2433503
Report Date: 06/21/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2433503-01	TG06-MW01-240613	WATER	PHILADELPHIA, PA	06/13/24 10:55	06/13/24
L2433503-02	TG06-MW04-240613	WATER	PHILADELPHIA, PA	06/13/24 12:25	06/13/24
L2433503-03	FB-061324	WATER	PHILADELPHIA, PA	06/13/24 11:00	06/13/24
L2433503-04	TB-061324	WATER	PHILADELPHIA, PA	06/12/24 00:00	06/13/24

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 06/21/24

ORGANICS

VOLATILES

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

SAMPLE RESULTS

Lab ID: L2433503-02
Client ID: TG06-MW04-240613
Sample Location: PHILADELPHIA, PA

Date Collected: 06/13/24 12:25
Date Received: 06/13/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/18/24 04:37
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	0.87		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	3.5		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	113		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

SAMPLE RESULTS

Lab ID: L2433503-03
Client ID: FB-061324
Sample Location: PHILADELPHIA, PA
Date Collected: 06/13/24 11:00
Date Received: 06/13/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/18/24 05:01
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	111		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

SAMPLE RESULTS

Lab ID: L2433503-04
Client ID: TB-061324
Sample Location: PHILADELPHIA, PA

Date Collected: 06/12/24 00:00
Date Received: 06/13/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/19/24 23:38
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/17/24 20:53
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1935955-5					
Benzene	ND		ug/l	0.50	0.16
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	110		70-130

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/19/24 19:51
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1937026-5					
Benzene	ND		ug/l	0.50	0.16
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2433503

Report Date: 06/21/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1935955-3 WG1935955-4								
Benzene	98		100		70-130	2		20
1,3,5-Trimethylbenzene	98		96		64-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		107		70-130
Toluene-d8	102		100		70-130
4-Bromofluorobenzene	100		95		70-130
Dibromofluoromethane	106		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2433503

Report Date: 06/21/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1937026-3 WG1937026-4								
Benzene	84		82		70-130	2		20
1,3,5-Trimethylbenzene	90		83		64-130	8		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		101		70-130
Toluene-d8	98		97		70-130
4-Bromofluorobenzene	100		103		70-130
Dibromofluoromethane	104		106		70-130

METALS

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

SAMPLE RESULTS

Lab ID: L2433503-01
Client ID: TG06-MW01-240613
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 06/13/24 10:55
Date Received: 06/13/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1.850		ug/l	1.000	0.3430	1	06/19/24 02:34	06/20/24 15:55	EPA 3005A	1,6020B	EJF

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

SAMPLE RESULTS

Lab ID: L2433503-03
Client ID: FB-061324
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 06/13/24 11:00
Date Received: 06/13/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	06/19/24 02:34	06/20/24 19:45	EPA 3005A	1,6020B	MRC

Project Name: PESRM
Project Number: 200.00135.014.03
Lab Number: L2433503
Report Date: 06/21/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1935816-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	06/19/24 02:34	06/20/24 09:27	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2433503

Report Date: 06/21/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1935816-2								
Lead, Total	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2433503
Report Date: 06/21/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1935816-3 QC Sample: L2433420-01 Client ID: MS Sample												
Lead, Total	ND	530	534.2	101		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PESRM

Project Number: 200.00135.014.03

Lab Number: L2433503

Report Date: 06/21/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1935816-4 QC Sample: L2433420-01 Client ID: DUP Sample						
Lead, Total	ND	ND	ug/l	NC		20

Project Name: PESRM
Project Number: 200.00135.014.03

Lab Number: L2433503
Report Date: 06/21/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2433503-01A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		PB-6020T-PPB(180)
L2433503-02A	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-02B	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-02C	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-03A	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-03B	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-03C	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-03D	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		PB-6020T-PPB(180)
L2433503-04A	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)
L2433503-04B	Vial HCl preserved	A	NA		4.4	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PESRM	**Lab Number:**	L2433503
Project Number:	200.00135.014.03	**Report Date:**	06/21/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of

Date Rec'd in Lab: 6/14/24

ALPHA Job #: L2433503

Project Information
Project Name: PESRM
Project Location: Philadelphia, PA
Project # 200.00135.014.03
(Use Project name as Project #)
Project Manager: Bill Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days: 5

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

Client Information
Client: Ransom
Address: 2127 Hamilton Ave
Hamilton, NJ
Phone: 609-584-0900
Fax:
Email: William.schmidt@pinchin.com

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
Lead 6010B
Benzene 8260B
1,3,5-Trimethylbenzene

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead 6010B	Benzene 8260B	1,3,5-Trimethylbenzene	Sample Specific Comments	Total # Bottles
33503 01	TG06-MW01-240613	6/13/24	1055	Aq	AL	x				1
02	TG06-MW04-240613		1225		AL		x			3
03	FB-061324		1100		AL	x	x			4
04	TB-061324		—		AL		x			2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P	V
Preservative	C	B

Relinquished By:	Date/Time	Received By:	Date/Time
	6/13/24 1445	ACE	6/13/24 1555
	6/13/24 1900		6/13/24 19:00
	6/13/24		6/14/24 0130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2303552
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PESRM
Project Number:	200.00135.014.04
Report Date:	02/17/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2303552-01	TANK-281-LNAPL-20230118	OIL	PHILADELPHIA, PA	01/18/23 09:40	01/20/23

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

Case Narrative (continued)

Report Submission

February 17, 2023: This final report includes the results of all requested analyses.

January 27, 2023: This is a preliminary report pending a decision regarding Phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 02/17/23

ORGANICS

SEMIVOLATILES

Project Name: PESRM
Project Number: 200.00135.014.04
Lab Number: L2303552
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01
Client ID: TANK-281-LNAPL-20230118
Sample Location: PHILADELPHIA, PA
Date Collected: 01/18/23 09:40
Date Received: 01/20/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 15:27
Analyst: CNC
Percent Solids:
Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	9.92	J	mg/kg	1.18	0.236	1
C1-Decalins	21.4		mg/kg	1.18	0.236	1
C2-Decalins	32.0		mg/kg	1.18	0.236	1
C3-Decalins	31.5		mg/kg	1.18	0.236	1
C4-Decalins	79.2		mg/kg	1.18	0.236	1
Naphthalene	4.65		mg/kg	2.37	0.682	1
C1-Naphthalenes	13.5		mg/kg	2.37	0.682	1
C2-Naphthalenes	110		mg/kg	2.37	0.682	1
C3-Naphthalenes	268		mg/kg	2.37	0.682	1
C4-Naphthalenes	272		mg/kg	2.37	0.682	1
2-Methylnaphthalene	9.36		mg/kg	2.37	0.612	1
1-Methylnaphthalene	13.5		mg/kg	2.37	0.747	1
Benzothiophene	ND		mg/kg	2.37	0.743	1
C1-Benzo(b)thiophenes	4.10		mg/kg	2.37	0.743	1
C2-Benzo(b)thiophenes	8.90		mg/kg	2.37	0.743	1
C3-Benzo(b)thiophenes	21.2		mg/kg	2.37	0.743	1
C4-Benzo(b)thiophenes	24.4		mg/kg	2.37	0.743	1
Biphenyl	ND		mg/kg	2.37	0.733	1
2,6-Dimethylnaphthalene	49.0		mg/kg	2.37	0.564	1
Dibenzofuran	2.88		mg/kg	2.37	0.747	1
Acenaphthylene	1.24	J	mg/kg	2.37	0.452	1
Acenaphthene	7.33		mg/kg	2.37	0.418	1
2,3,5-Trimethylnaphthalene	55.5		mg/kg	2.37	0.388	1
Fluorene	25.1		mg/kg	2.37	0.632	1
C1-Fluorenes	89.8		mg/kg	2.37	0.632	1
C2-Fluorenes	264		mg/kg	2.37	0.632	1
C3-Fluorenes	305		mg/kg	2.37	0.632	1
Dibenzothiophene	4.59		mg/kg	2.37	0.654	1

Project Name: PESRM **Lab Number:** L2303552

Project Number: 200.00135.014.04 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01 Date Collected: 01/18/23 09:40

Client ID: TANK-281-LNAPL-20230118 Date Received: 01/20/23

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	30.5		mg/kg	2.37	0.654	1
2/3-Methyldibenzothiophene(2MDT)	28.3		mg/kg	2.37	0.654	1
1-Methyldibenzothiophene(1MDT)	14.2		mg/kg	2.37	0.654	1
C1-Dibenzothiophenes BS	75.0		mg/kg	2.37	0.654	1
C2-Dibenzothiophenes	186		mg/kg	2.37	0.654	1
C3-Dibenzothiophenes	245		mg/kg	2.37	0.654	1
C4-Dibenzothiophenes	129		mg/kg	2.37	0.654	1
Phenanthrene	9.22		mg/kg	2.37	0.786	1
3-Methylphenanthrene (3MP)	21.7		mg/kg	2.37	0.786	1
2-Methylphenanthrene (2MP)	14.9		mg/kg	2.37	0.786	1
2-Methylanthracene (2MA)	9.36		mg/kg	2.37	0.786	1
9/4-Methylphenanthrene (9MP)	36.4		mg/kg	2.37	0.786	1
1-Methylphenanthrene (1MP)	50.0		mg/kg	2.37	0.786	1
C1-Phenanthrenes/Anthracenes	142		mg/kg	2.37	0.786	1
C2-Phenanthrenes/Anthr BS	436		mg/kg	2.37	0.786	1
C3-Phenanthrenes/Anthracenes	410		mg/kg	2.37	0.786	1
C4-Phenanthrenes/Anthracenes	207		mg/kg	2.37	0.786	1
Retene	ND		mg/kg	2.37	0.582	1
Anthracene	10.5		mg/kg	2.37	0.489	1
Carbazole	ND		mg/kg	2.37	0.776	1
Fluoranthene	9.11		mg/kg	2.37	0.754	1
Benzo(b)fluorene	10.5		mg/kg	2.37	0.687	1
7H-Benzo(c)fluorene	6.42		mg/kg	2.37	0.687	1
2-Methylpyrene[1]	21.3		mg/kg	2.37	0.624	1
4-Methylpyrene[1]	26.2		mg/kg	2.37	0.624	1
1-Methylpyrene[1]	18.5		mg/kg	2.37	0.624	1
Pyrene	48.5		mg/kg	2.37	0.624	1
C1-Fluoranthenes/Pyrenes	125		mg/kg	2.37	0.624	1
C2-Fluoranthenes/Pyrenes	176		mg/kg	2.37	0.624	1
C3-Fluoranthenes/Pyrenes	201		mg/kg	2.37	0.624	1
C4-Fluoranthenes/Pyrenes	168		mg/kg	2.37	0.624	1
Naphthobenzothiophenes	27.5		mg/kg	2.37	0.664	1
C1-Naphthobenzothiophenes	97.5		mg/kg	2.37	0.664	1
C2-Naphthobenzothiophenes	137		mg/kg	2.37	0.664	1
C3-Naphthobenzothiophenes	112		mg/kg	2.37	0.664	1
C4-Naphthobenzothiophenes	81.8		mg/kg	2.37	0.664	1
Benz(a)anthracene	13.8		mg/kg	2.37	0.483	1

Project Name: PESRM **Lab Number:** L2303552

Project Number: 200.00135.014.04 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01 Date Collected: 01/18/23 09:40

Client ID: TANK-281-LNAPL-20230118 Date Received: 01/20/23

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Chrysene/Triphenylene	43.4		mg/kg	2.37	0.479	1
C1-Chrysenes	125		mg/kg	2.37	0.479	1
C2-Chrysenes BS	177		mg/kg	2.37	0.479	1
C3-Chrysenes	176		mg/kg	2.37	0.479	1
C4-Chrysenes	113		mg/kg	2.37	0.479	1
Benzo(b)fluoranthene	9.25		mg/kg	2.37	0.617	1
Benzo(j)+(k)fluoranthene	3.30		mg/kg	2.37	0.471	1
Benzo(a)fluoranthene	ND		mg/kg	2.37	0.471	1
Benzo(e)pyrene	15.7		mg/kg	2.37	0.489	1
Benzo(a)pyrene	10.5		mg/kg	2.37	0.677	1
Perylene	32.3		mg/kg	2.37	0.458	1
Indeno(1,2,3-cd)pyrene	2.71		mg/kg	2.37	0.644	1
Dibenz(a,h)+(a,c)anthracene	2.59		mg/kg	2.37	0.641	1
Benzo(g,h,i)perylene	5.04		mg/kg	2.37	0.630	1
Hopane (T19)	365		mg/kg	2.37	0.675	1
C23 Tricyclic Terpane (T4)	36.7		mg/kg	2.37	0.675	1
C24 Tricyclic Terpane (T5)	28.5		mg/kg	2.37	0.675	1
C25 Tricyclic Terpane (T6)	25.7		mg/kg	2.37	0.675	1
C24 Tetracyclic Terpane (T6a)	17.7		mg/kg	2.37	0.675	1
C26 Tricyclic Terpane-22S (T6b)	14.8		mg/kg	2.37	0.675	1
C26 Tricyclic Terpane-22R (T6c)	12.7		mg/kg	2.37	0.675	1
C28 Tricyclic Terpane-22S (T7)	15.2		mg/kg	2.37	0.675	1
C28 Tricyclic Terpane-22R (T8)	14.7		mg/kg	2.37	0.675	1
C29 Tricyclic Terpane-22S (T9)	14.2		mg/kg	2.37	0.675	1
C29 Tricyclic Terpane-22R (T10)	13.8		mg/kg	2.37	0.675	1
18a-22,29,30-Trisnorneohopane-TS (T11)	66.3		mg/kg	2.37	0.675	1
C30 Tricyclic Terpane-22S	17.3		mg/kg	2.37	0.675	1
C30 Tricyclic Terpane-22R	11.8		mg/kg	2.37	0.675	1
17a(H)-22,29,30-Trisnorhopane-TM (T12)	71.4		mg/kg	2.37	0.675	1
17a/b,21b/a 28,30-Bisnorhopane (T14a)	25.1		mg/kg	2.37	0.675	1
17a(H),21b(H)-25-Norhopane (T14b)	6.77		mg/kg	2.37	0.675	1
30-Norhopane (T15)	239		mg/kg	2.37	0.675	1
18a(H)-30-Norneohopane-C29Ts (T16)	71.5		mg/kg	2.37	0.675	1
17a(H)-Diahopane (X)	21.6		mg/kg	2.37	0.675	1
30-Normoretane (T17)	51.8		mg/kg	2.37	0.675	1
18a(H)&18b(H)-Oleananes (T18)	219		mg/kg	2.37	0.675	1
Moretane (T20)	61.4		mg/kg	2.37	0.675	1

Project Name: PESRM **Lab Number:** L2303552

Project Number: 200.00135.014.04 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01 Date Collected: 01/18/23 09:40

Client ID: TANK-281-LNAPL-20230118 Date Received: 01/20/23

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
30-Homohopane-22S (T21)	101		mg/kg	2.37	0.675	1
30-Homohopane-22R (T22)	83.6		mg/kg	2.37	0.675	1
30,31-Bishomohopane-22S (T26)	67.8		mg/kg	2.37	0.675	1
30,31-Bishomohopane-22R (T27)	55.4		mg/kg	2.37	0.675	1
30,31-Trishomohopane-22S (T30)	44.1		mg/kg	2.37	0.675	1
30,31-Trishomohopane-22R (T31)	25.4		mg/kg	2.37	0.675	1
Tetrakishomohopane-22S (T32)	28.6		mg/kg	2.37	0.675	1
Tetrakishomohopane-22R (T33)	22.1		mg/kg	2.37	0.675	1
Pentakishomohopane-22S (T34)	17.0		mg/kg	2.37	0.675	1
Pentakishomohopane-22R (T35)	17.9		mg/kg	2.37	0.675	1
13b(H),17a(H)-20S-Diacholestane (S4)	69.8		mg/kg	2.37	0.527	1
13b(H),17a(H)-20R-Diacholestane (S5)	38.9		mg/kg	2.37	0.527	1
13b,17a-20S-Methyldiacholestane (S8)	36.1		mg/kg	2.37	0.527	1
17a(H)20SC27/C29dia	87.1		mg/kg	2.37	0.527	1
17a(H)20RC27/C29dia	99.3		mg/kg	2.37	0.527	1
Unknown Sterane (S18)	18.6		mg/kg	2.37	0.527	1
13a,17b-20S-Ethyldiacholestane (S19)	5.31		mg/kg	2.37	0.527	1
14a,17a-20S-Methylcholestane (S20)	43.9		mg/kg	2.37	0.527	1
14a,17a-20R-Methylcholestane (S24)	49.7		mg/kg	2.37	0.527	1
14a(H),17a(H)-20S-Ethylcholestane (S25)	50.9		mg/kg	2.37	0.527	1
14a(H),17a(H)-20R-Ethylcholestane (S28)	61.9		mg/kg	2.37	0.527	1
14b(H),17b(H)-20R-Cholestane (S14)	49.4		mg/kg	2.37	0.527	1
14b(H),17b(H)-20S-Cholestane (S15)	50.8		mg/kg	2.37	0.527	1
14b,17b-20R-Methylcholestane (S22)	46.8		mg/kg	2.37	0.527	1
14b,17b-20S-Methylcholestane (S23)	60.6		mg/kg	2.37	0.527	1
14b(H),17b(H)-20R-Ethylcholestane (S26)	67.6		mg/kg	2.37	0.527	1
14b(H),17b(H)-20S-Ethylcholestane (S27)	38.8		mg/kg	2.37	0.527	1
C26,20R+C27,20S TAS	255		mg/kg	2.37	0.527	1
C28,20S TAS	197		mg/kg	2.37	0.527	1
C27,20R TAS	158		mg/kg	2.37	0.527	1
C28,20R TAS	167		mg/kg	2.37	0.527	1

Project Name: PESRM **Lab Number:** L2303552

Project Number: 200.00135.014.04 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01 Date Collected: 01/18/23 09:40

Client ID: TANK-281-LNAPL-20230118 Date Received: 01/20/23

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	84		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	109		50-130
5B(H)Cholane-Surr	110		50-130

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 11:14
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1740061-1					
cis/trans-Decalin	ND		mg/kg	1.50	0.298
C1-Decalins	ND		mg/kg	1.50	0.298
C2-Decalins	ND		mg/kg	1.50	0.298
C3-Decalins	ND		mg/kg	1.50	0.298
C4-Decalins	ND		mg/kg	1.50	0.298
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	ND		mg/kg	3.00	0.862
C3-Naphthalenes	ND		mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Benzothiophene	ND		mg/kg	3.00	0.940
C1-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C2-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C3-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C4-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
4-Methyldibenzothiophene(4MDT)	ND		mg/kg	3.00	0.827

Project Name: PESRM
Project Number: 200.00135.014.04
Lab Number: L2303552
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 11:14
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1740061-1					
2/3-Methyldibenzothiophene(2MDT)	ND		mg/kg	3.00	0.827
1-Methyldibenzothiophene(1MDT)	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
3-Methylphenanthrene (3MP)	ND		mg/kg	3.00	0.994
2-Methylphenanthrene (2MP)	ND		mg/kg	3.00	0.994
2-Methylanthracene (2MA)	ND		mg/kg	3.00	0.994
9/4-Methylphenanthrene (9MP)	ND		mg/kg	3.00	0.994
1-Methylphenanthrene (1MP)	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618
Carbazole	ND		mg/kg	3.00	0.981
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
7H-Benzo(c)fluorene	ND		mg/kg	3.00	0.869
2-Methylpyrene[1]	ND		mg/kg	3.00	0.789
4-Methylpyrene[1]	ND		mg/kg	3.00	0.789
1-Methylpyrene[1]	ND		mg/kg	3.00	0.789
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 11:14
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1740061-1					
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C1-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C2-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C3-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C4-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	ND		mg/kg	3.00	0.619
Benzo(a)pyrene	ND		mg/kg	3.00	0.856
Perylene	ND		mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	ND		mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	3.00	0.810
Benzo(g,h,i)perylene	ND		mg/kg	3.00	0.797
Hopane (T19)	ND		mg/kg	3.00	0.854
C23 Tricyclic Terpane (T4)	ND		mg/kg	3.00	0.854
C24 Tricyclic Terpane (T5)	ND		mg/kg	3.00	0.854
C25 Tricyclic Terpane (T6)	ND		mg/kg	3.00	0.854
C24 Tetracyclic Terpane (T6a)	ND		mg/kg	3.00	0.854
C26 Tricyclic Terpane-22S (T6b)	ND		mg/kg	3.00	0.854
C26 Tricyclic Terpane-22R (T6c)	ND		mg/kg	3.00	0.854
C28 Tricyclic Terpane-22S (T7)	ND		mg/kg	3.00	0.854

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 11:14
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1740061-1					
C28 Tricyclic Terpane-22R (T8)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22S (T9)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22R (T10)	ND		mg/kg	3.00	0.854
18a-22,29,30-Trisnorneohopane-TS (T11)	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22S	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22R	ND		mg/kg	3.00	0.854
17a(H)-22,29,30-Trisnorhopane-TM (T12)	ND		mg/kg	3.00	0.854
17a/b,21b/a 28,30-Bisnorhopane (T14a)	ND		mg/kg	3.00	0.854
17a(H),21b(H)-25-Norhopane (T14b)	ND		mg/kg	3.00	0.854
30-Norhopane (T15)	ND		mg/kg	3.00	0.854
18a(H)-30-Norneohopane-C29Ts (T16)	ND		mg/kg	3.00	0.854
17a(H)-Diahopane (X)	ND		mg/kg	3.00	0.854
30-Normoretane (T17)	ND		mg/kg	3.00	0.854
18a(H)&18b(H)-Oleananes (T18)	ND		mg/kg	3.00	0.854
Moretane (T20)	ND		mg/kg	3.00	0.854
30-Homohopane-22S (T21)	ND		mg/kg	3.00	0.854
30-Homohopane-22R (T22)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22S (T26)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22R (T27)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22S (T30)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22R (T31)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22S (T32)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22R (T33)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22S (T34)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22R (T35)	ND		mg/kg	3.00	0.854
13b(H),17a(H)-20S-Diacholestane (S4)	ND		mg/kg	3.00	0.666
13b(H),17a(H)-20R-Diacholestane (S5)	ND		mg/kg	3.00	0.666
13b,17a-20S-Methyldiacholestane (S8)	ND		mg/kg	3.00	0.666
17a(H)20SC27/C29dia	ND		mg/kg	3.00	0.666

Project Name: PESRM
Project Number: 200.00135.014.04
Lab Number: L2303552
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/04/23 11:14
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/02/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1740061-1					
17a(H)20RC27/C29dia	ND		mg/kg	3.00	0.666
Unknown Sterane (S18)	ND		mg/kg	3.00	0.666
13a,17b-20S-Ethyldiacholestane (S19)	ND		mg/kg	3.00	0.666
14a,17a-20S-Methylcholestane (S20)	ND		mg/kg	3.00	0.666
14a,17a-20R-Methylcholestane (S24)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20S-Ethylcholestane (S25)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20R-Ethylcholestane (S28)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Cholestane (S14)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Cholestane (S15)	ND		mg/kg	3.00	0.666
14b,17b-20R-Methylcholestane (S22)	ND		mg/kg	3.00	0.666
14b,17b-20S-Methylcholestane (S23)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Ethylcholestane (S26)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Ethylcholestane (S27)	ND		mg/kg	3.00	0.666
C26,20R+C27,20S TAS	ND		mg/kg	3.00	0.666
C28,20S TAS	ND		mg/kg	3.00	0.666
C27,20R TAS	ND		mg/kg	3.00	0.666
C28,20R TAS	ND		mg/kg	3.00	0.666

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	74		50-130
Phenanthrene-d10	88		50-130
Benzo(a)pyrene-d12	100		50-130
5B(H)Cholane-Surr	86		50-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1740061-2 WG1740061-3								
Naphthalene	90		89		50-130	1		30
2-Methylnaphthalene	86		82		50-130	5		30
Acenaphthylene	86		86		50-130	0		30
Acenaphthene	92		90		50-130	2		30
Fluorene	88		88		50-130	0		30
Phenanthrene	90		90		50-130	0		30
Anthracene	95		95		50-130	0		30
Fluoranthene	95		97		50-130	2		30
Pyrene	98		97		50-130	1		30
Benz(a)anthracene	92		93		50-130	1		30
Chrysene/Triphenylene	96		92		50-130	4		30
Benzo(b)fluoranthene	104		105		50-130	1		30
Benzo(j)+(k)fluoranthene	110		108		50-130	2		30
Benzo(a)pyrene	101		100		50-130	1		30
Indeno(1,2,3-cd)pyrene	106		105		50-130	1		30
Dibenz(a,h)+(a,c)anthracene	104		105		50-130	1		30
Benzo(g,h,i)perylene	108		105		50-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1740061-2 WG1740061-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	86		86		50-130
Phenanthrene-d10	92		91		50-130
Benzo(a)pyrene-d12	104		102		50-130
5B(H)Cholane-Surr	85		80		50-130

PETROLEUM HYDROCARBONS

Project Name: PESRM
Lab Number: L2303552
Project Number: 200.00135.014.04
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2303552-01
Client ID: TANK-281-LNAPL-20230118
Sample Location: PHILADELPHIA, PA

Date Collected: 01/18/23 09:40
Date Received: 01/20/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8015D(M)
Analytical Date: 01/22/25 00:00
Analyst: AC
Percent Solids:

Extraction Method: N/A

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Whole Oil Analysis - Mansfield Lab						
Refer To Case Narrative/Chromatograms			-	-	1.00	1

Project Name: PESRM
Project Number: 200.00135.014.04

Lab Number: L2303552
Report Date: 02/17/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2303552-01A	Vial unpreserved 20ml hard-cap	A	NA		4.8	Y	Absent		A2-WHOLEOIL(365),A2-ALKPAH/BIOMARKER(365)
L2303552-01B	Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		A2-ALKPAH/BIOMARKER(365)
L2303552-01C	Glass 60mL/2oz unpreserved	A	NA		4.8	Y	Absent		A2-ALKPAH/BIOMARKER(365)
L2303552-01D	Amber 1000ml unpreserved	A	NA		4.8	Y	Absent		A2-ALKPAH/BIOMARKER(365)
L2303552-01E	Amber 1000ml unpreserved	A	NA		4.8	Y	Absent		A2-ALKPAH/BIOMARKER(365)

*Values in parentheses indicate holding time in days

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PESRM	**Lab Number:**	L2303552
Project Number:	200.00135.014.04	**Report Date:**	02/17/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/21/23

ALPHA Job #: L2303552

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Ave.
Hamilton, NJ 08619
Phone: 609-584-0090 x 341
Fax:
Email: William.Schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PESRM
Project Location: Phila., PA
Project #: 200.00135.014.04
Project Manager: William Schmidt
ALPHA Quote #: 21278

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 200.00135.014

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Whole Oil (8015D(M))	Alkylated PAHs (8270 E-SIM)	Organic Lead (8270 E-SIM)	PIANO (8270 E-SIM)	VOC 8260	Saturated Hydrocarbons 8015	MS ions PAHs and MS-FS PAHs w/Library Search	SAMPLE HANDLING	TOTAL # BOTTLES
03552-01	Tank 281 – LNAPL	1/18/23	9:40	Co	Co	X	H	H	H	H	H		Run Whole Oil hold Rest	

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)
Sample Specific Comments

Container Type	G	G	G	G	G	G
Preservative	–	–	–	–	–	–

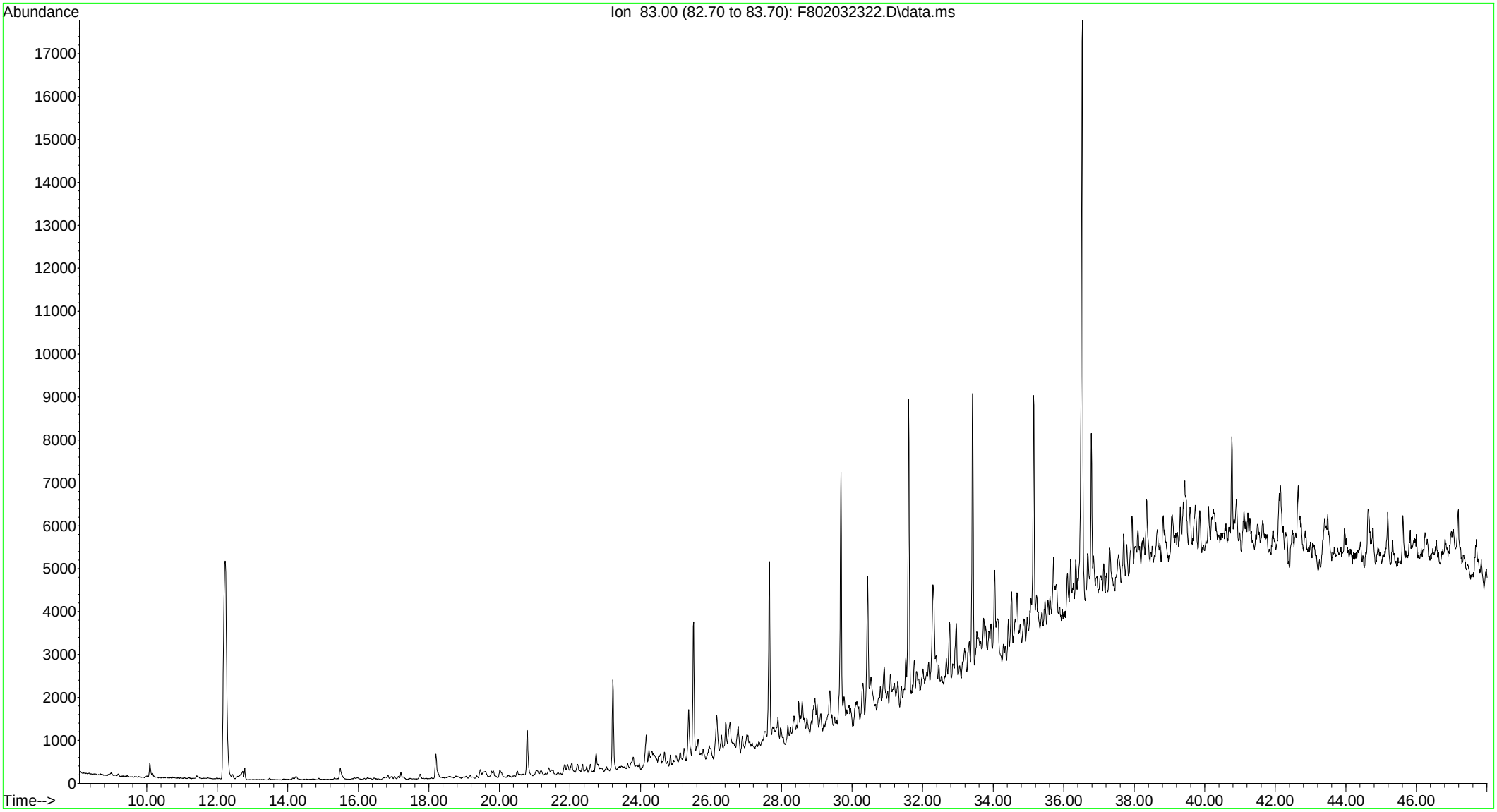
Relinquished By:	Date/Time	Received By:	Date/Time
R. Mandap 1/21/23 0900			
William Schmidt	1/20/23 12:20	JAVIER BAEZ	1/20 13:20
JAVIER BAEZ	1/20/23 17:40		1/20/23 17:30
	1/20/23 20:05		1/20/23 21:25
1/21/23 500	1/20/23 23:15		1/20/23 23:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

Ion Chromatograms

File :O:\Forensics\Data\PAH8\2023\FEB23\feb03\F802032322.D
Operator : PAH8:CNC
Acquired : 4 Feb 2023 3:27 pm using AcqMethod FRNC8A.M
Instrument : PAH8
Sample Name: L2303552-01,32,,
Misc Info : WG1741025,WG1740061,ICAL19648
Vial Number: 22



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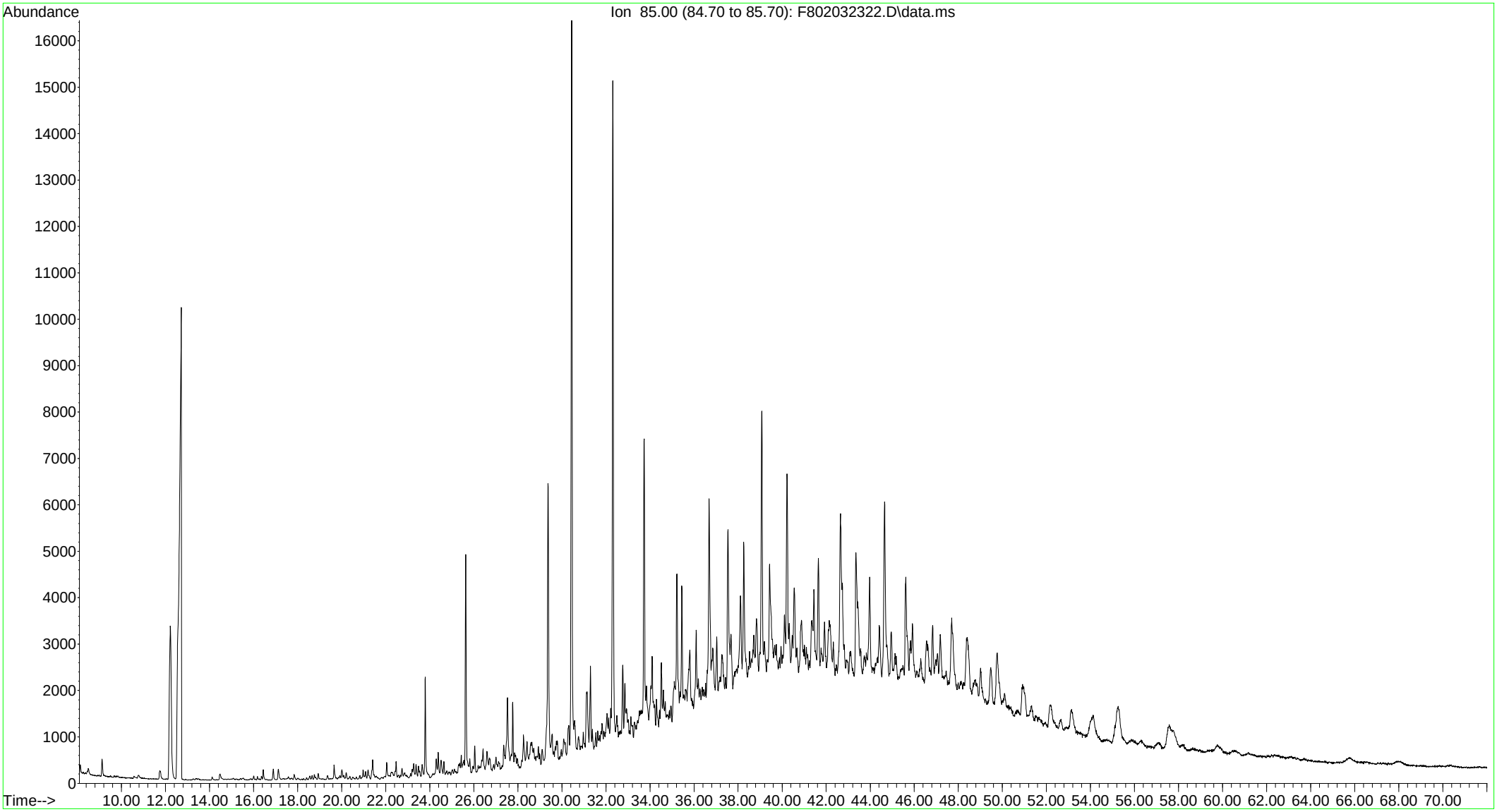
Vial Number: 22



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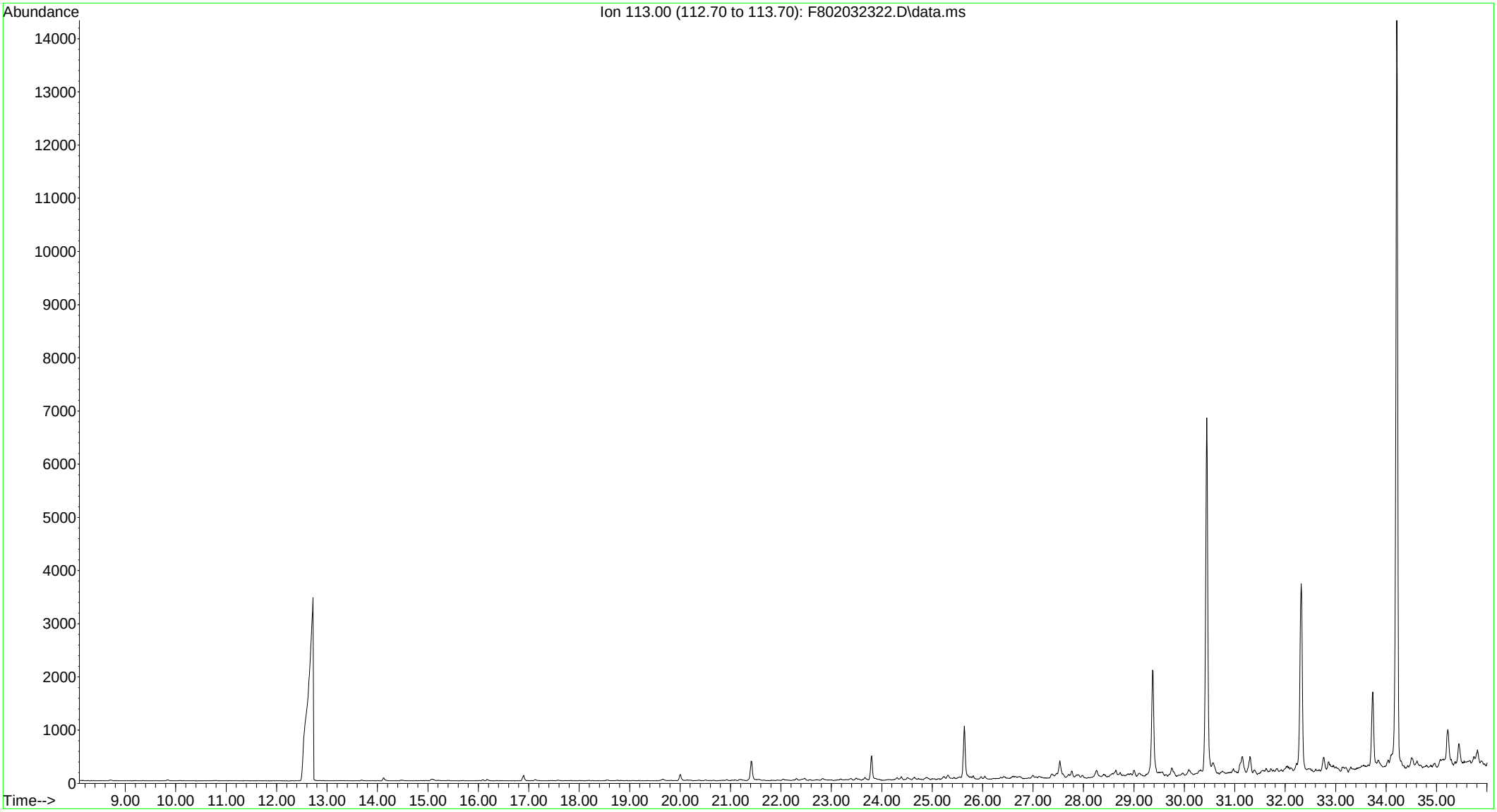
Vial Number: 22



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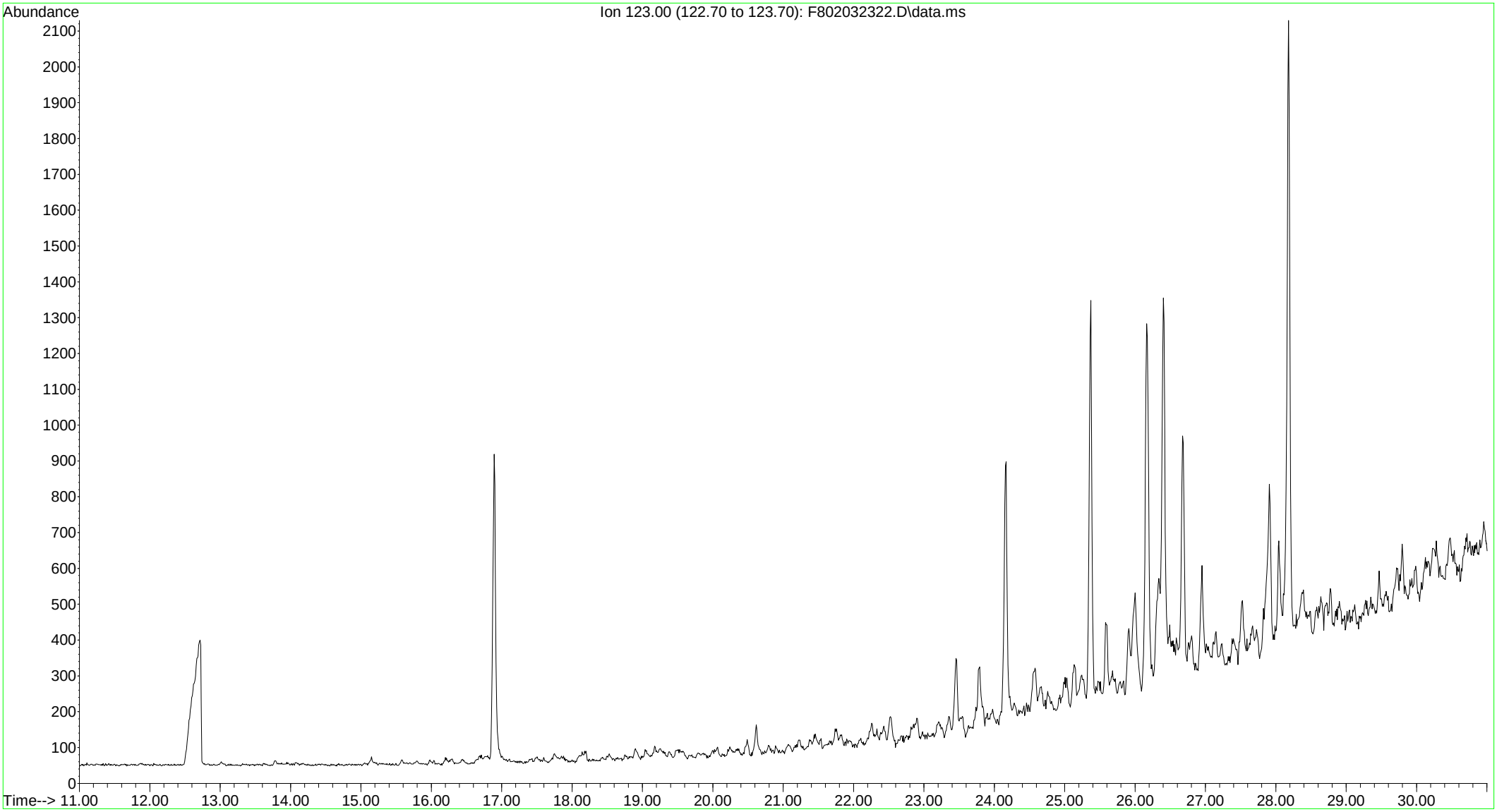

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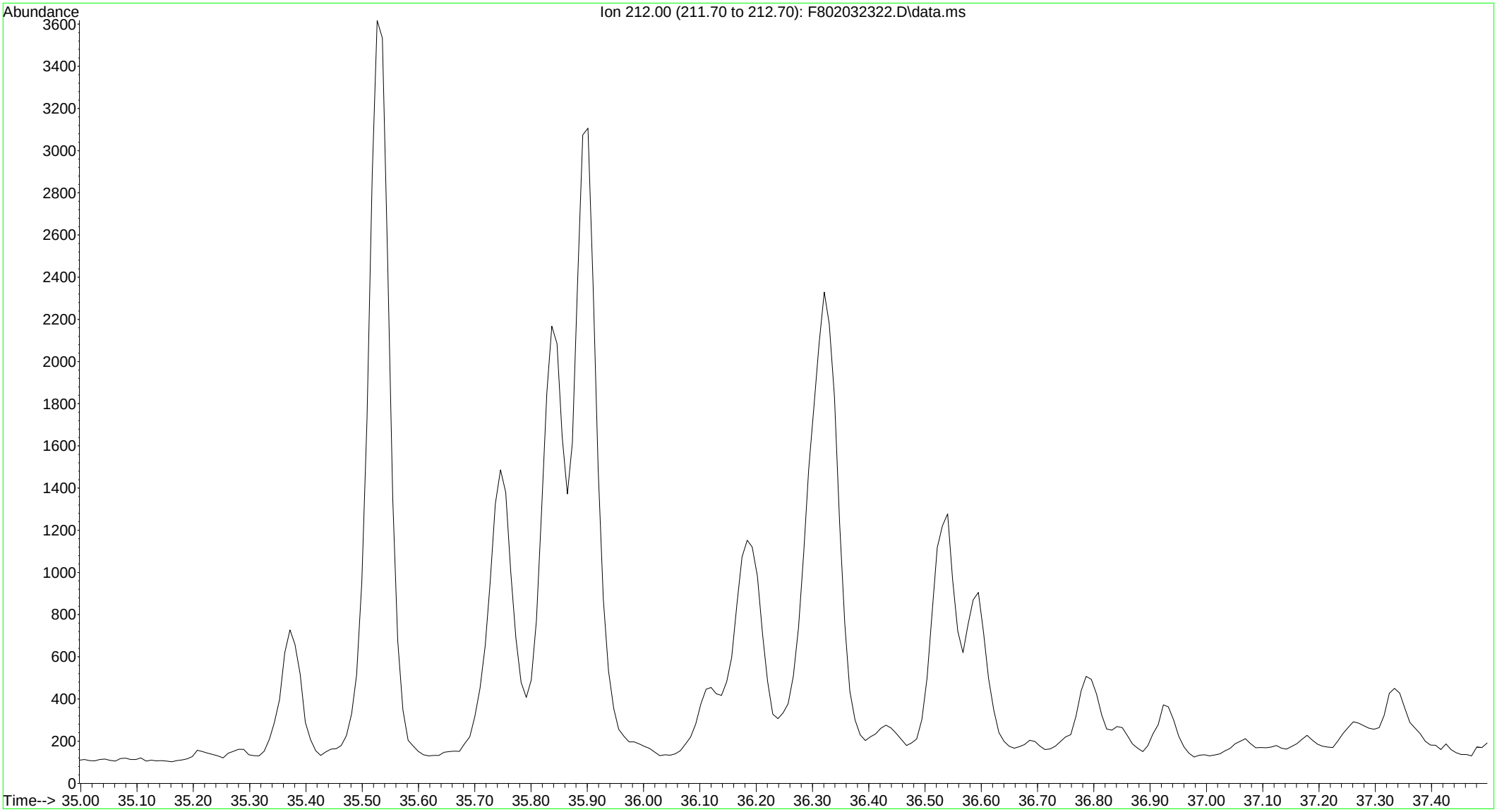

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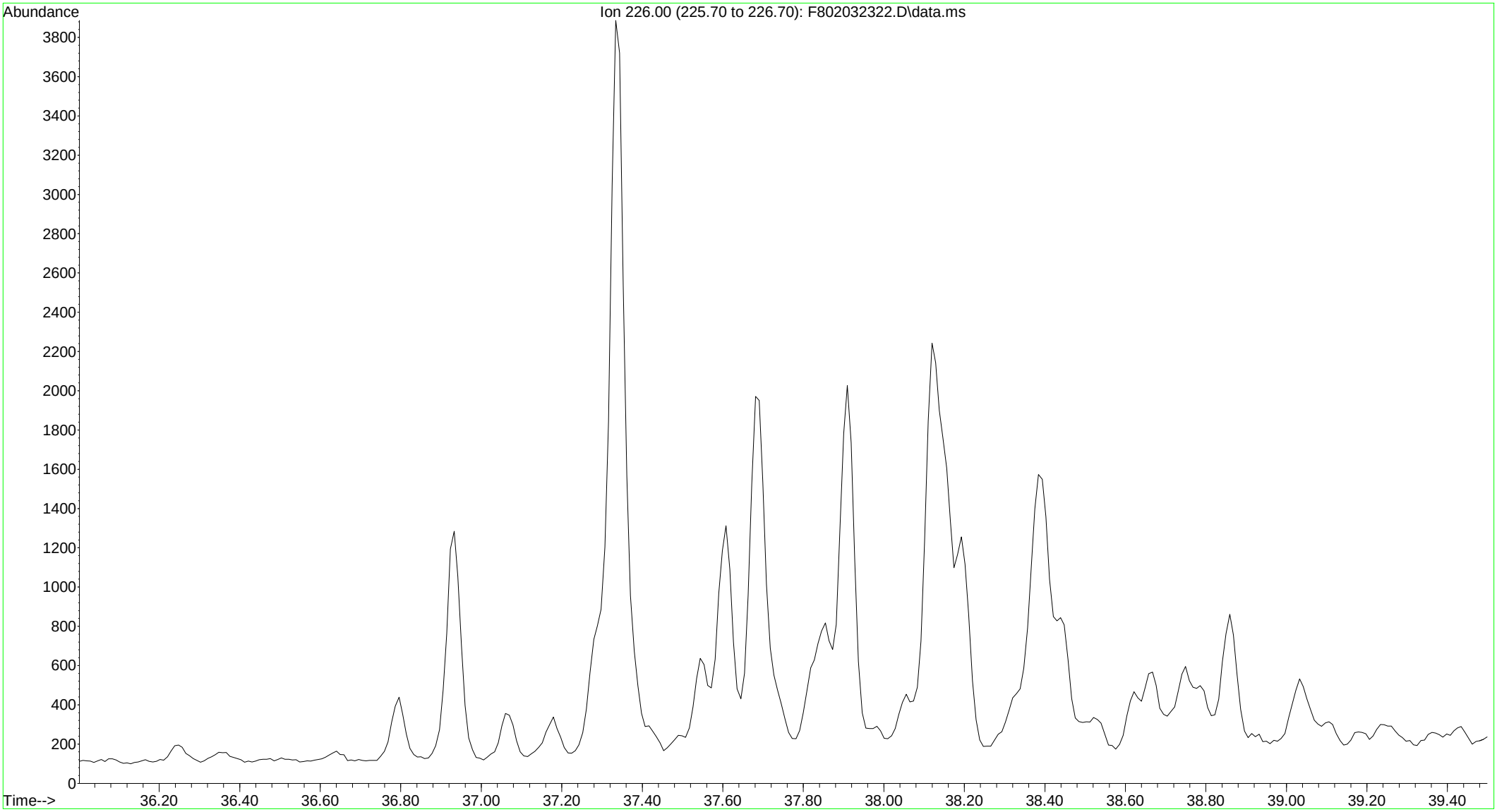
Vial Number: 22



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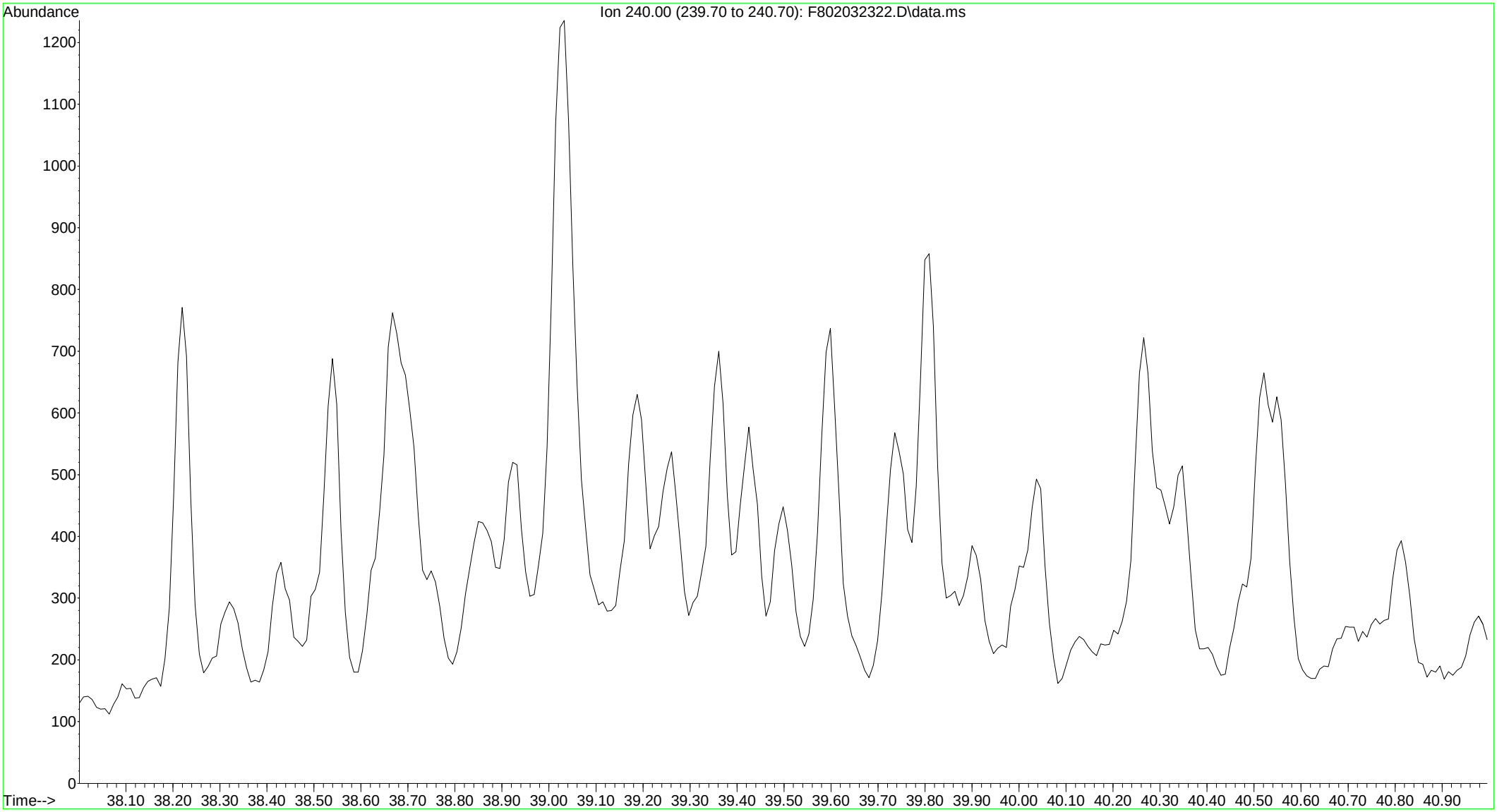

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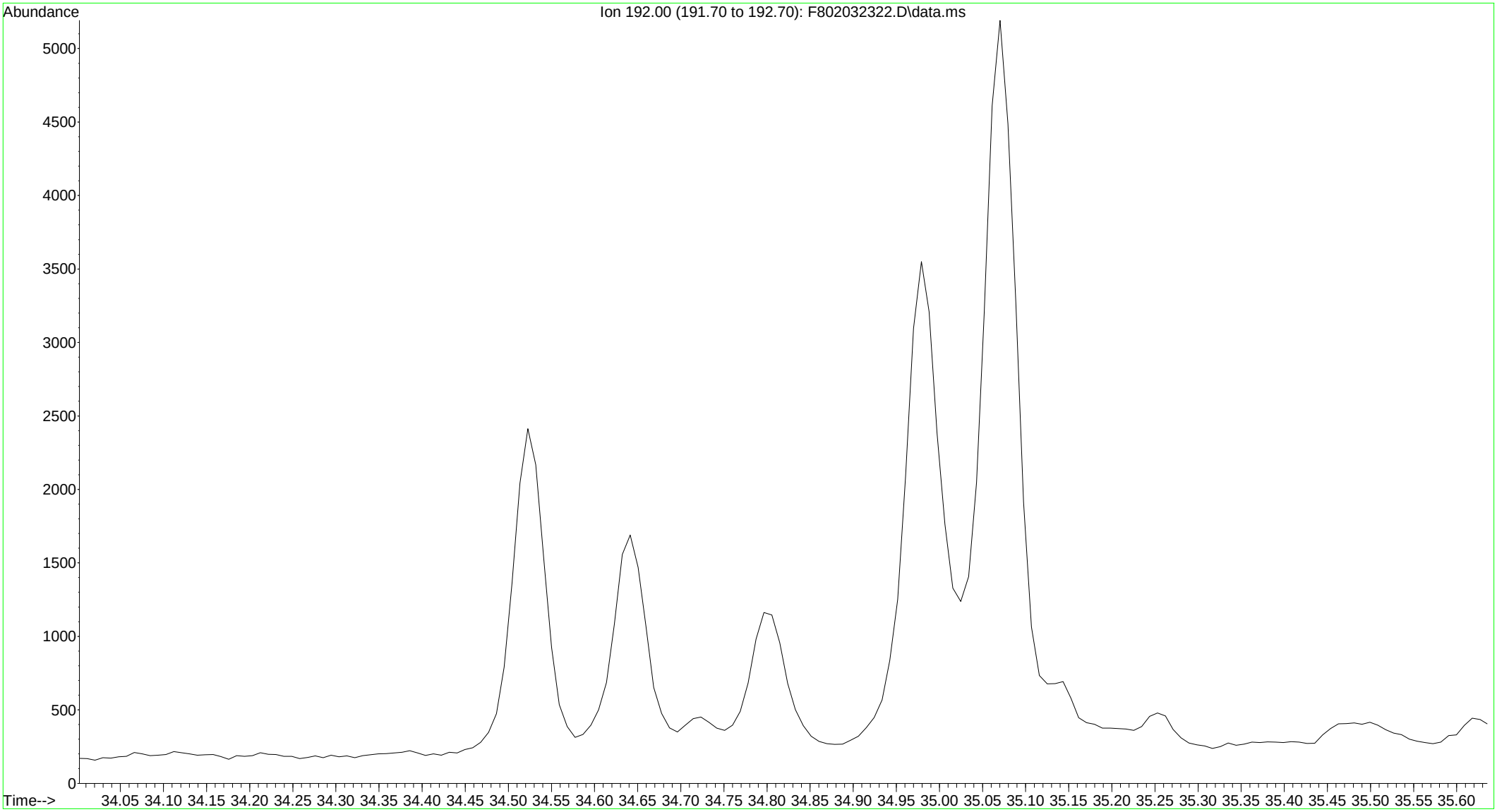

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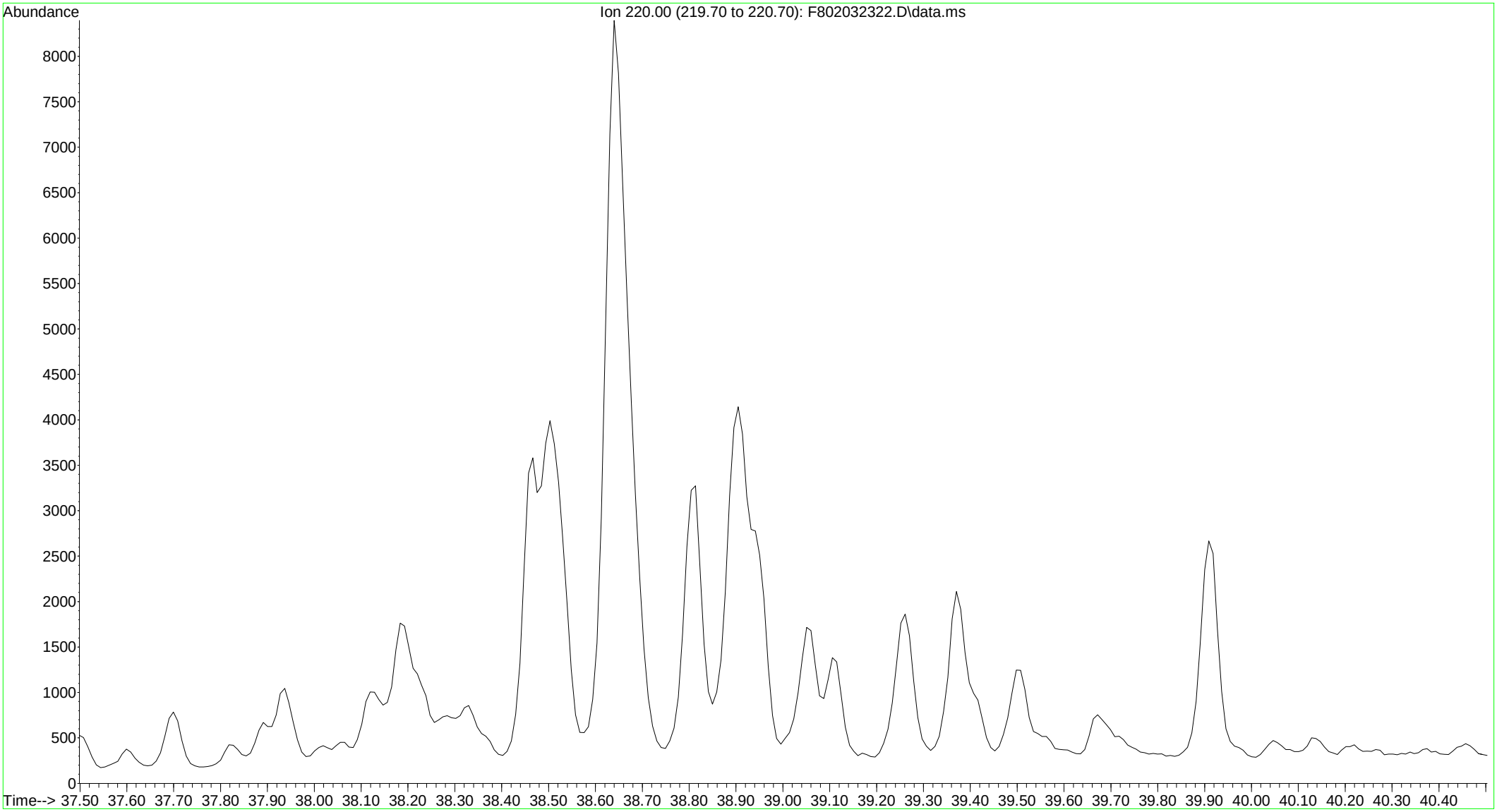
Misc Info : WG1741025,WG1740061,ICAL19648
Vial Number: 22



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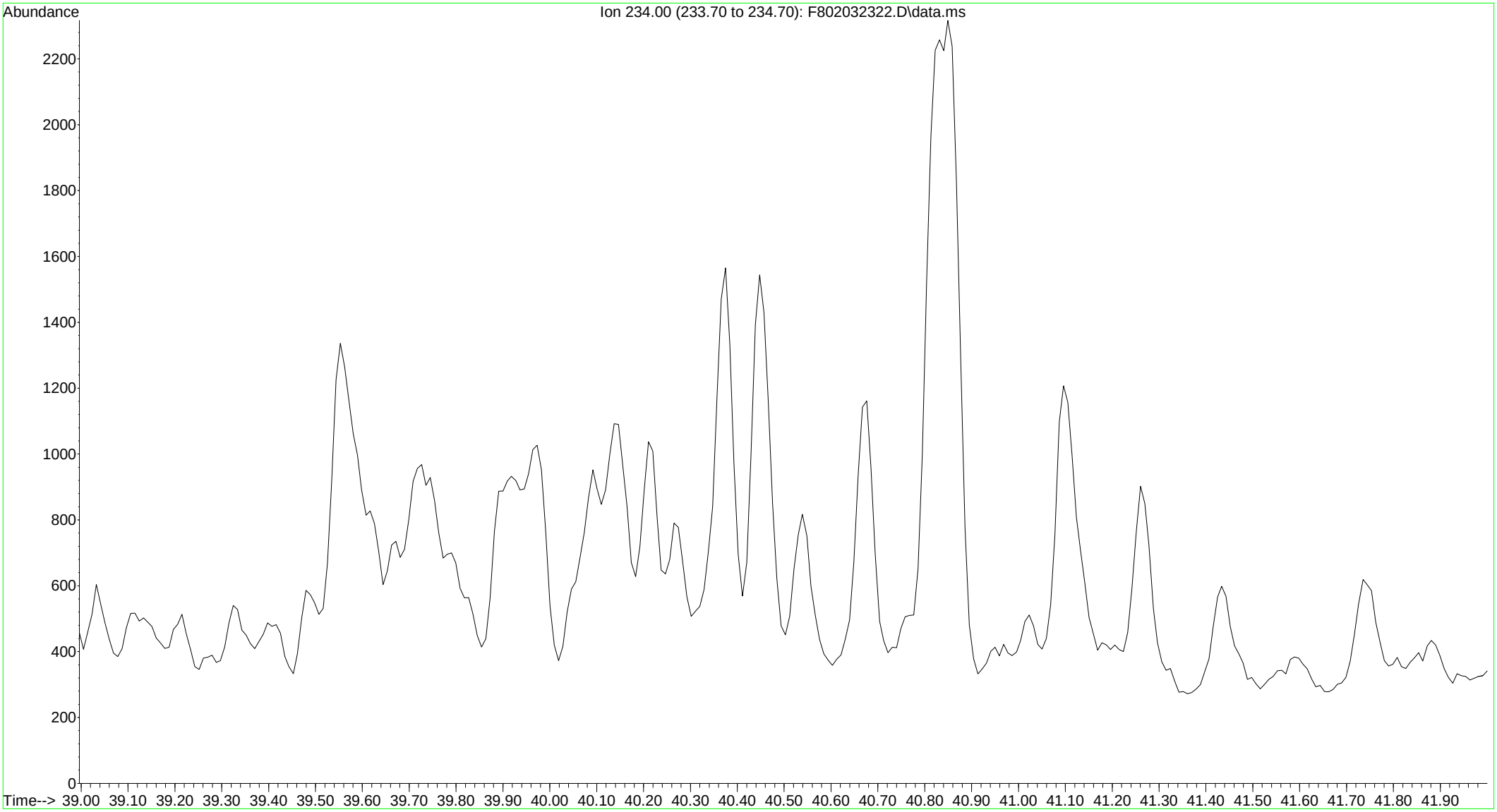
Instrument : PAH8
Sample Name: L2303552-01,32,,
Misc Info : WG1741025,WG1740061,ICAL19648
Vial Number: 22



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Instrument : PAH8
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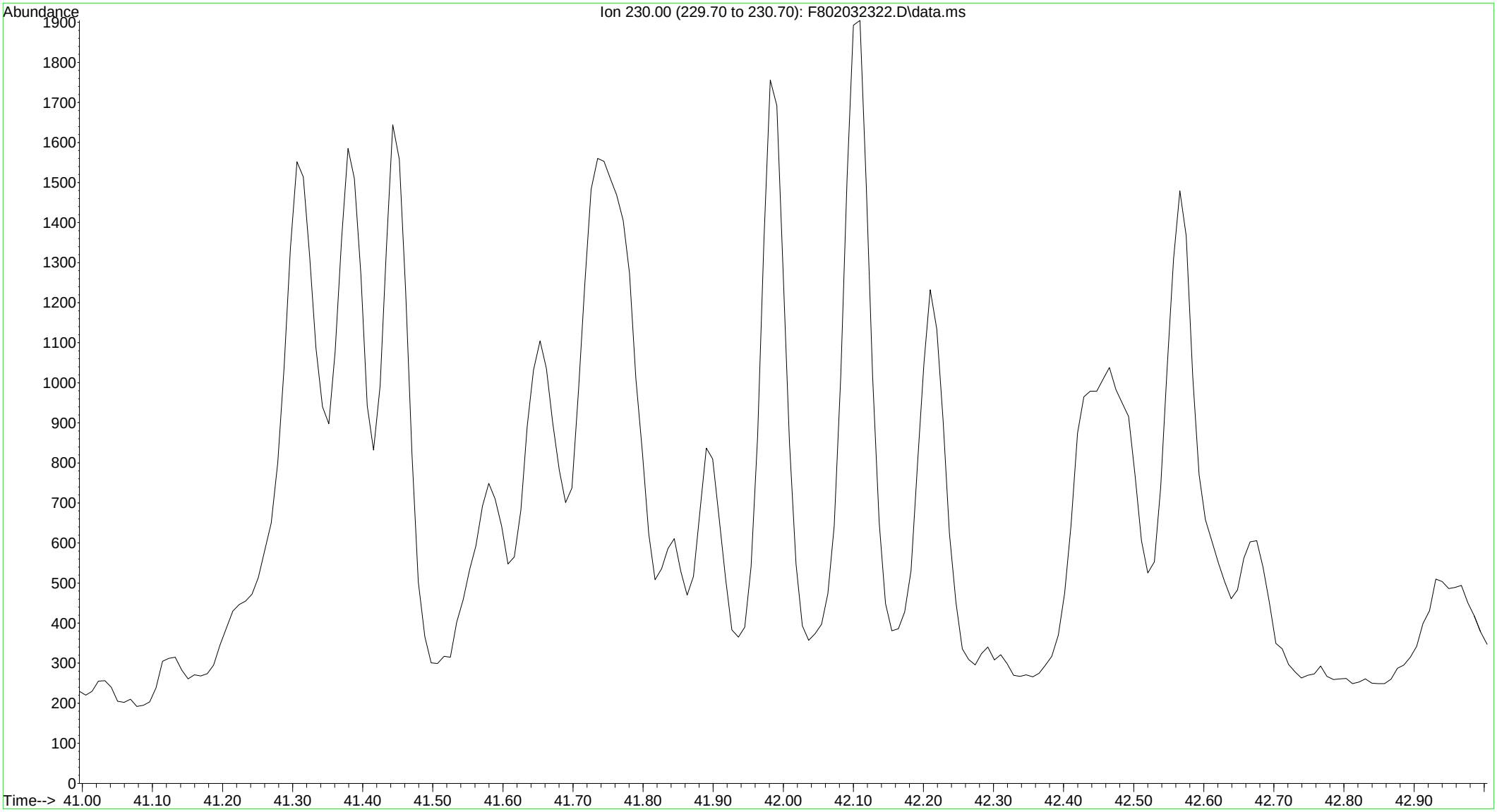
Vial Number: 22



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Instrument : PAH8
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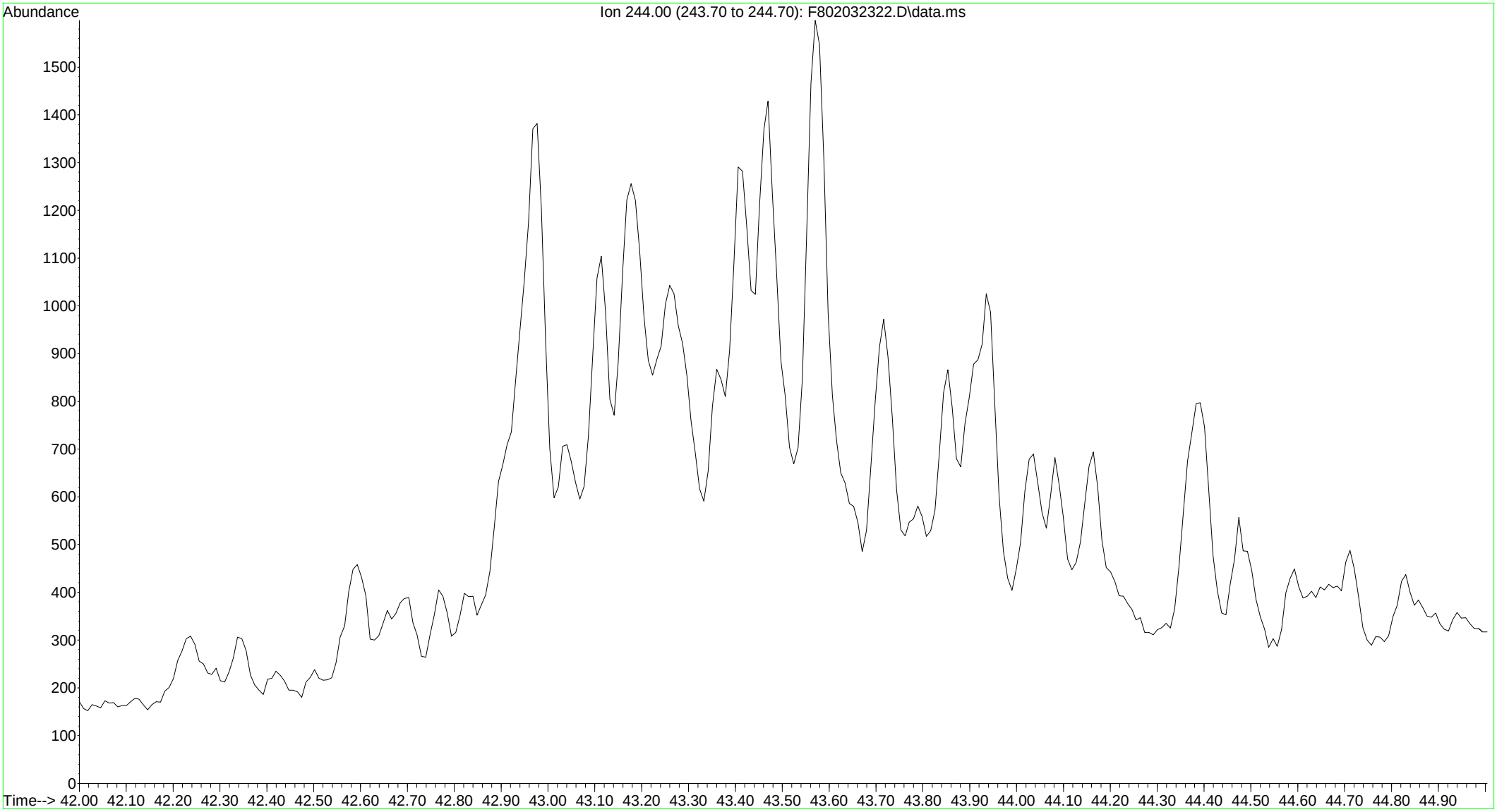

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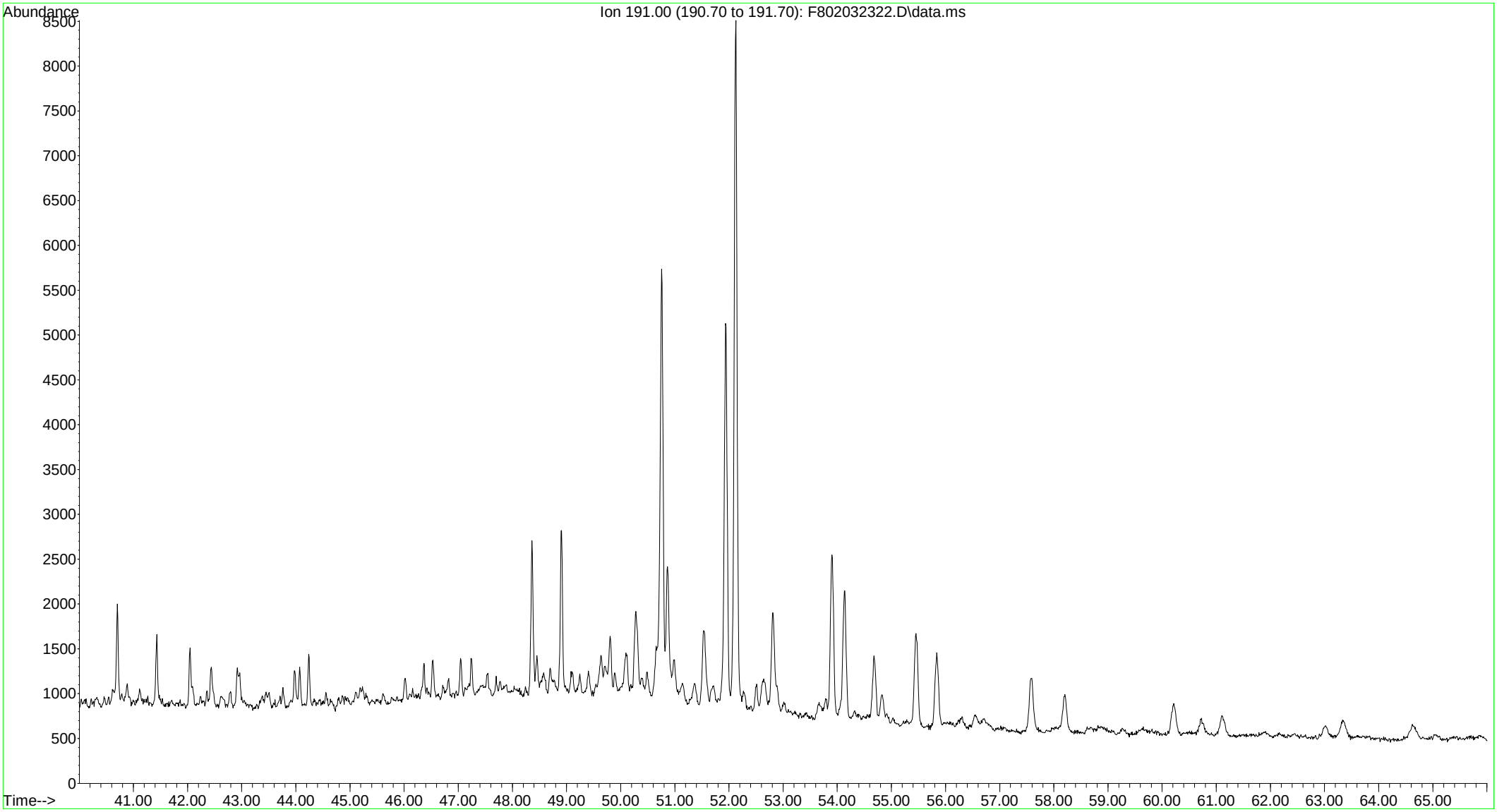

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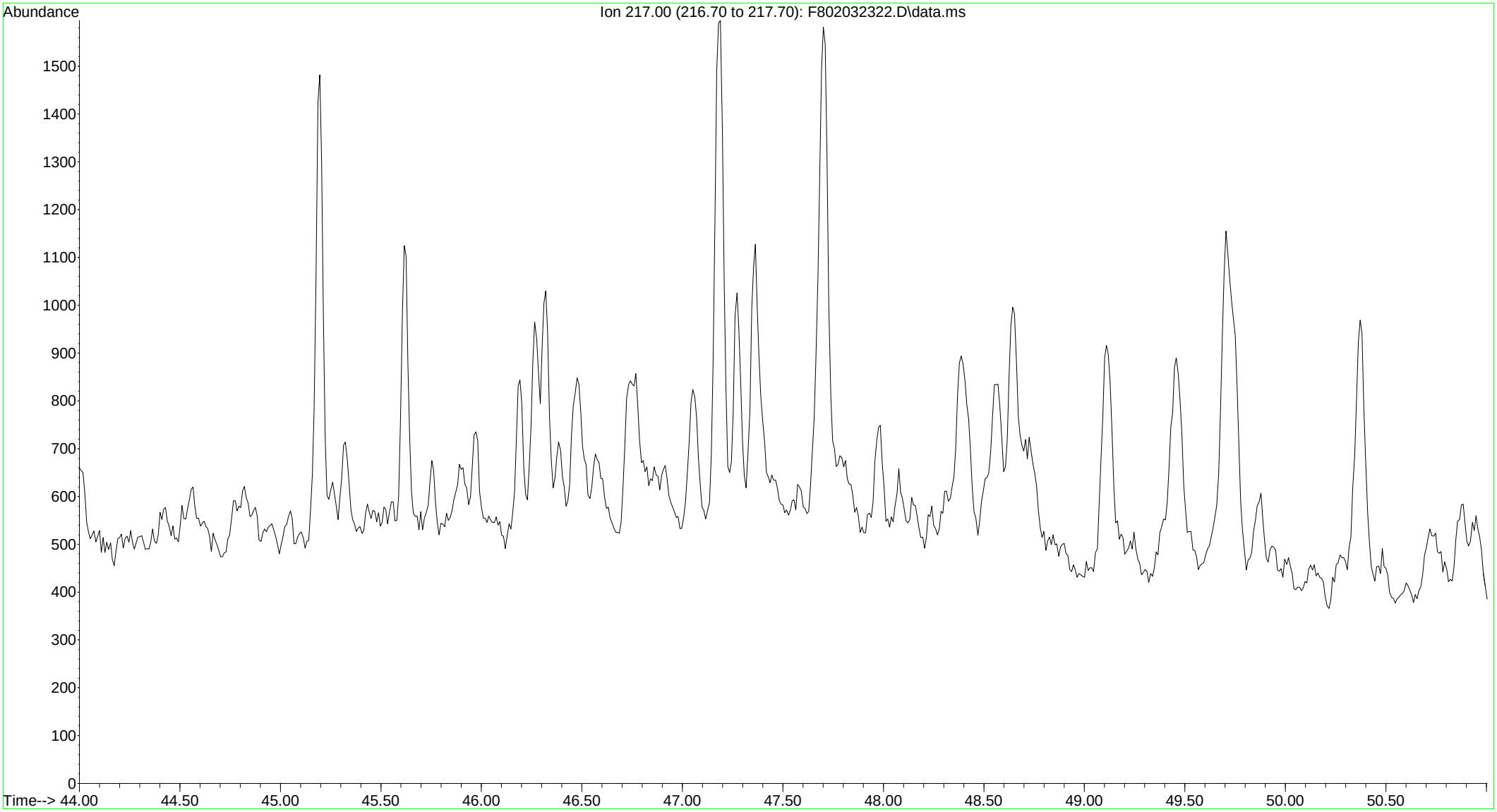

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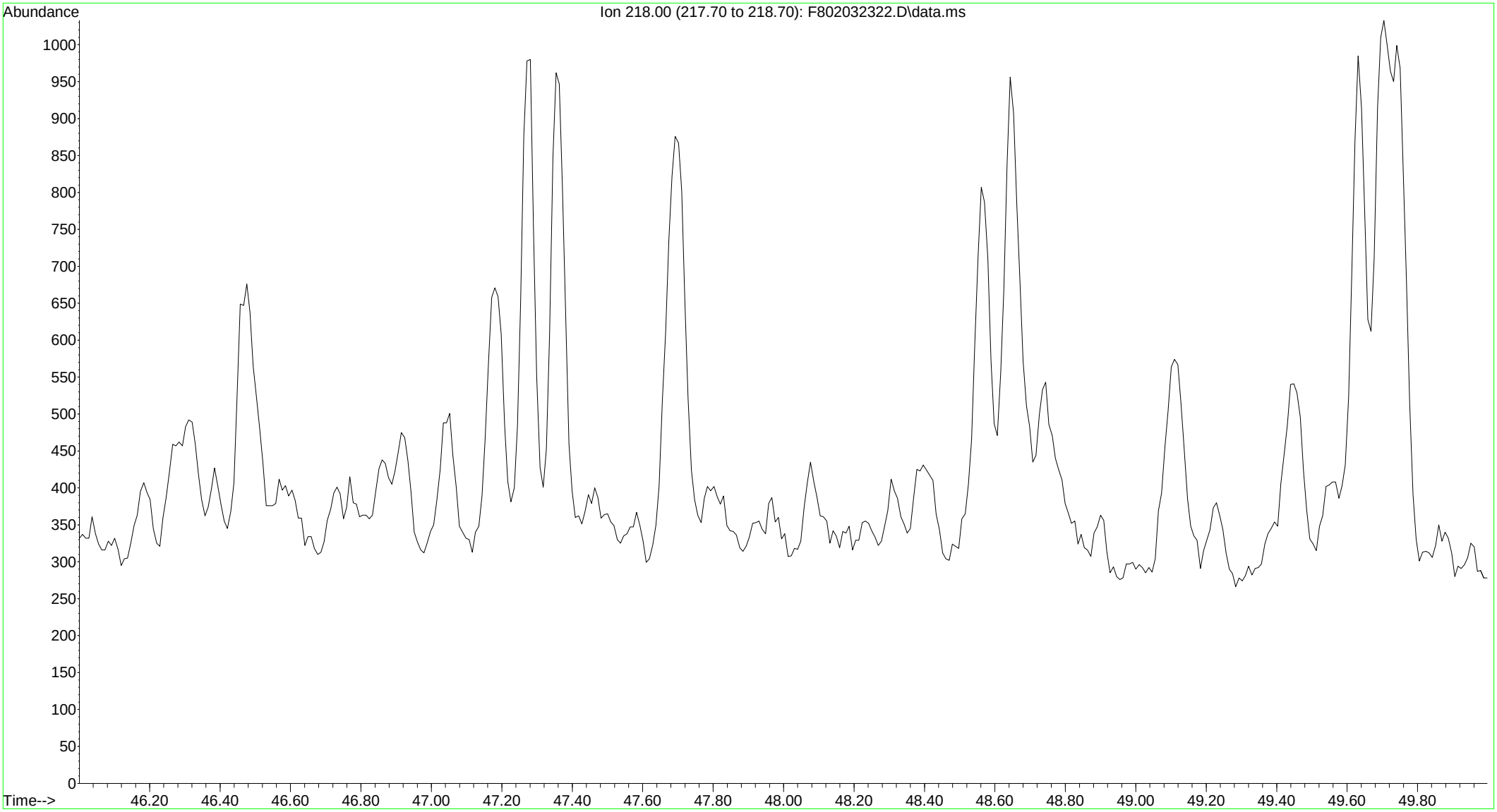

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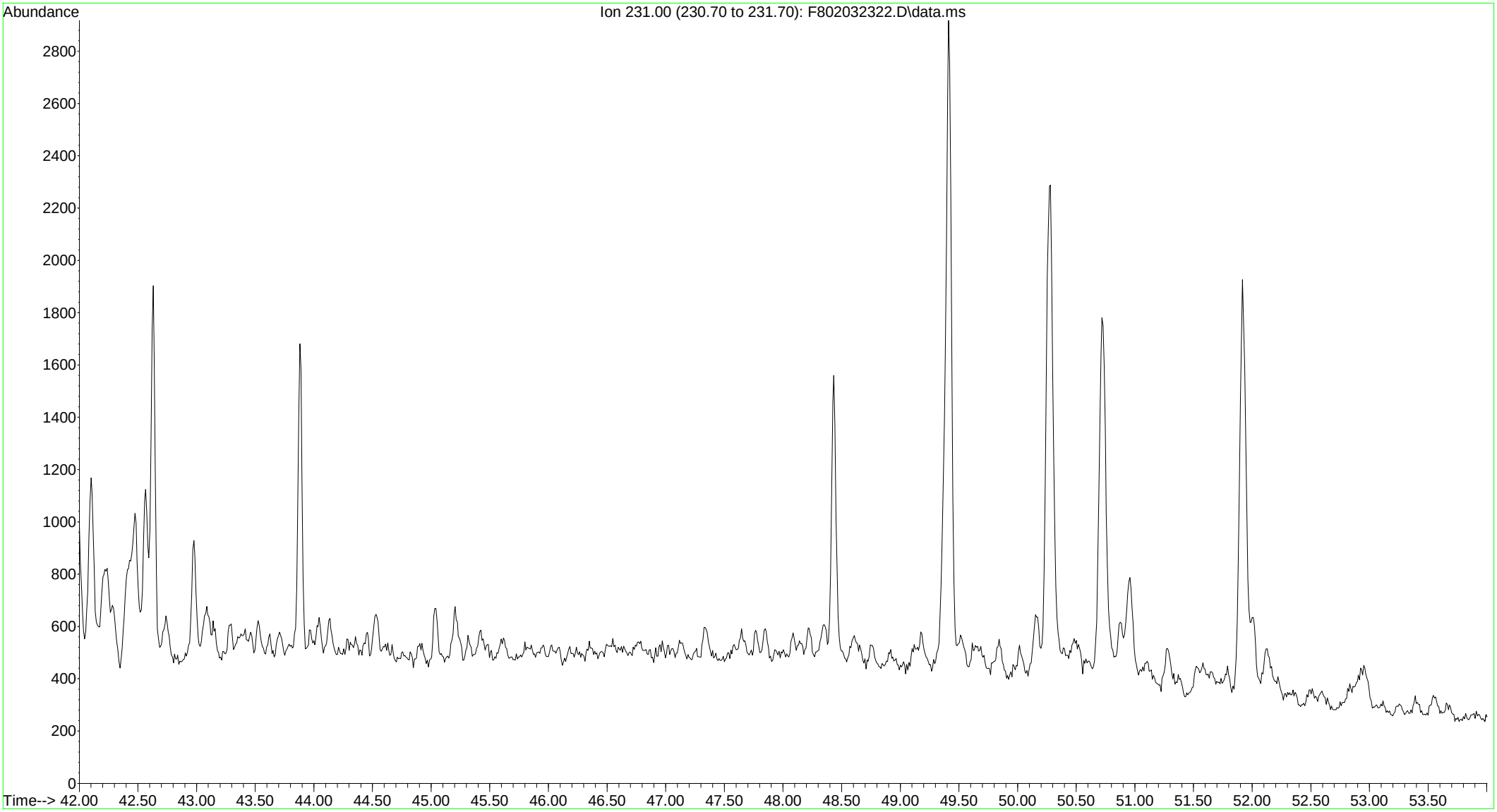
Acquired : 4 Feb 2023 3:27 pm using AcqMethod FRNC8A.M
Instrument : PAH8
Sample Name: L2303552-01,32,,
Misc Info : WG1741025,WG1740061,ICAL19648
Vial Number: 22



Whole Oil by GC-FID Chromatograms

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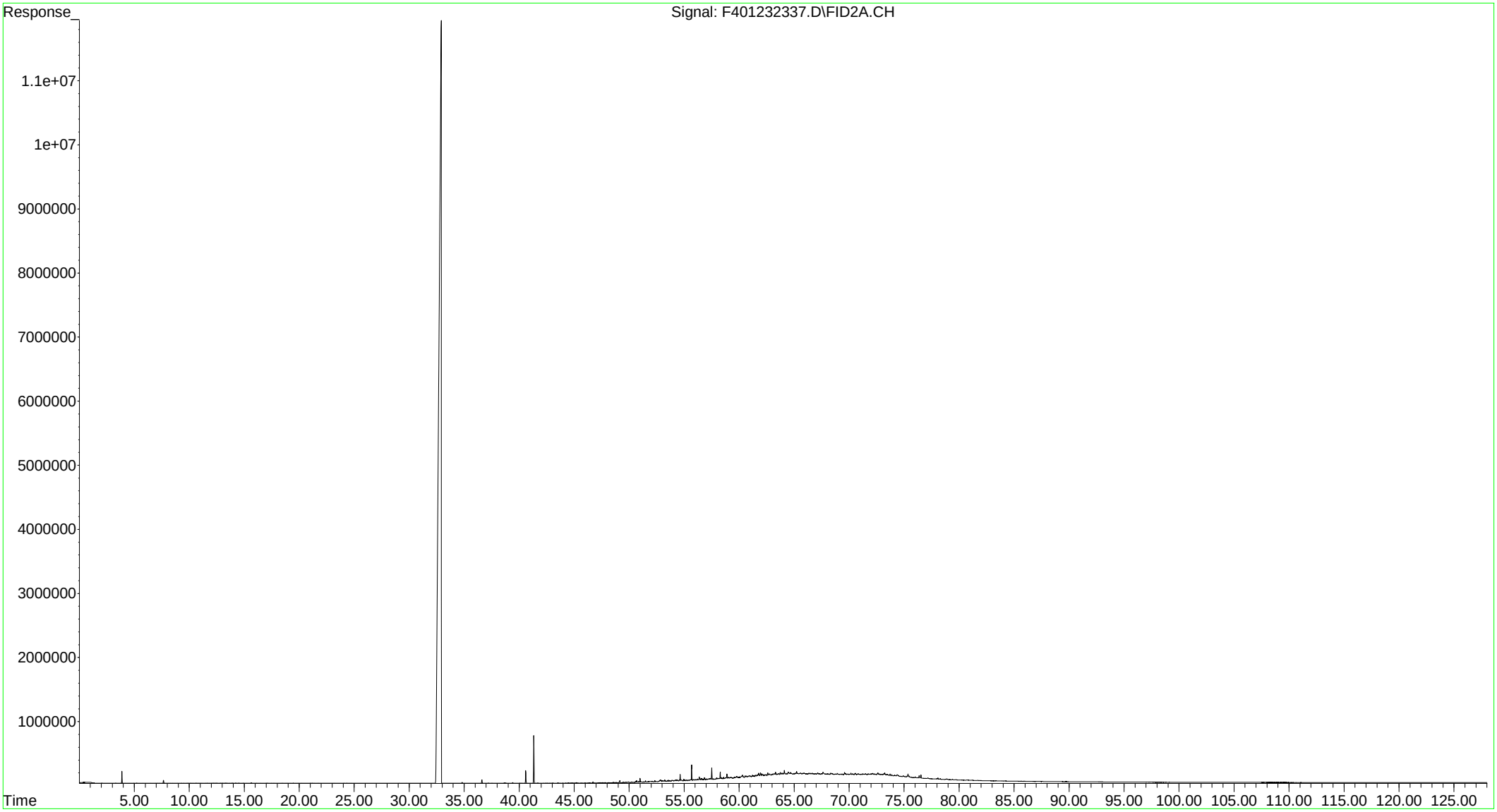
Operator   : AC
Acquired   : 26 Jan 2023   4:17 am using AcqMethod WHOIL4A.M
Instrument :   PAH 4
Sample Name: L12303552-01
Misc Info :
Vial Number: 69



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Instrument : PAH 4
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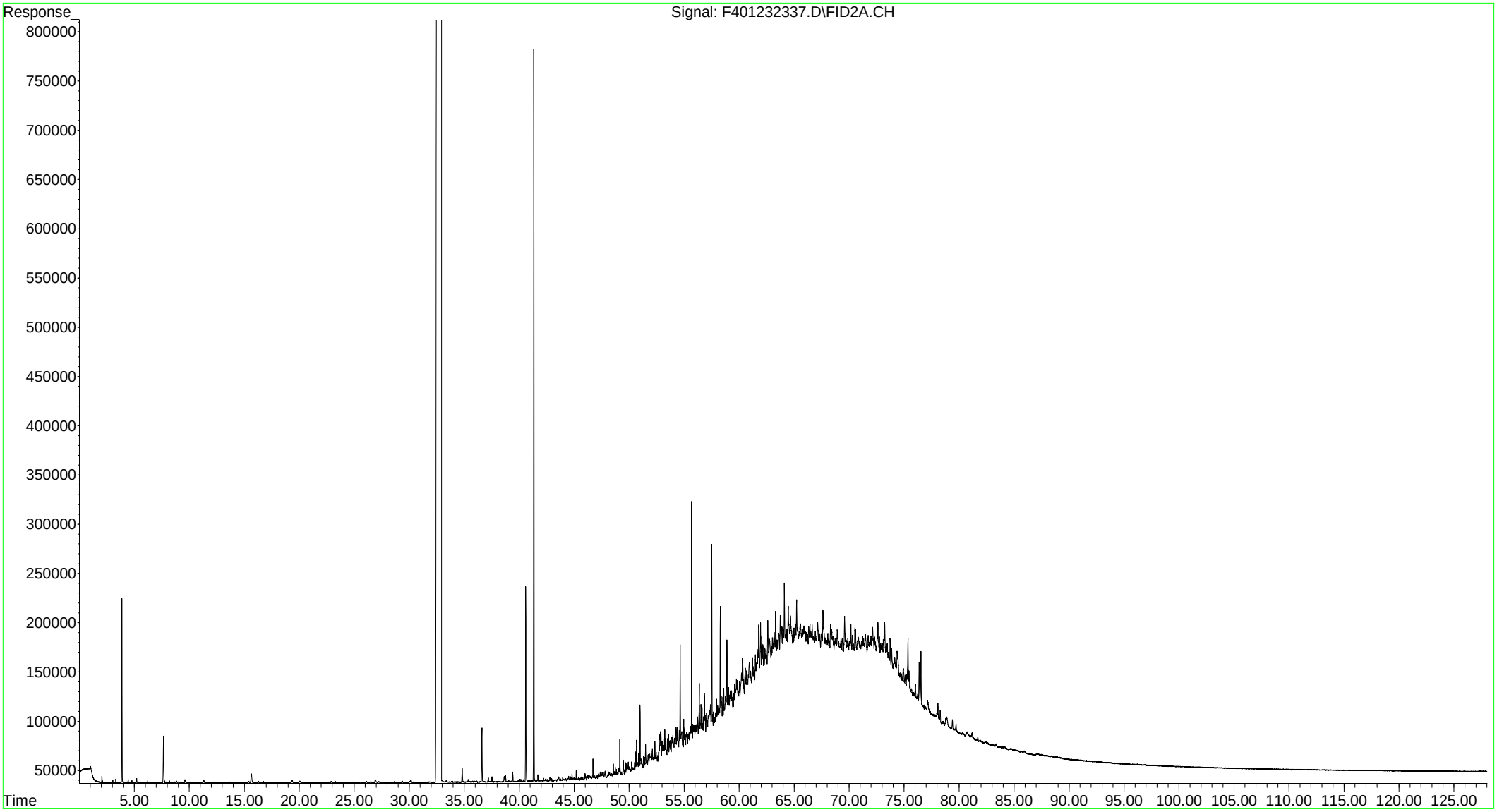
Vial Number: 69



Whole Oil Reference Oils

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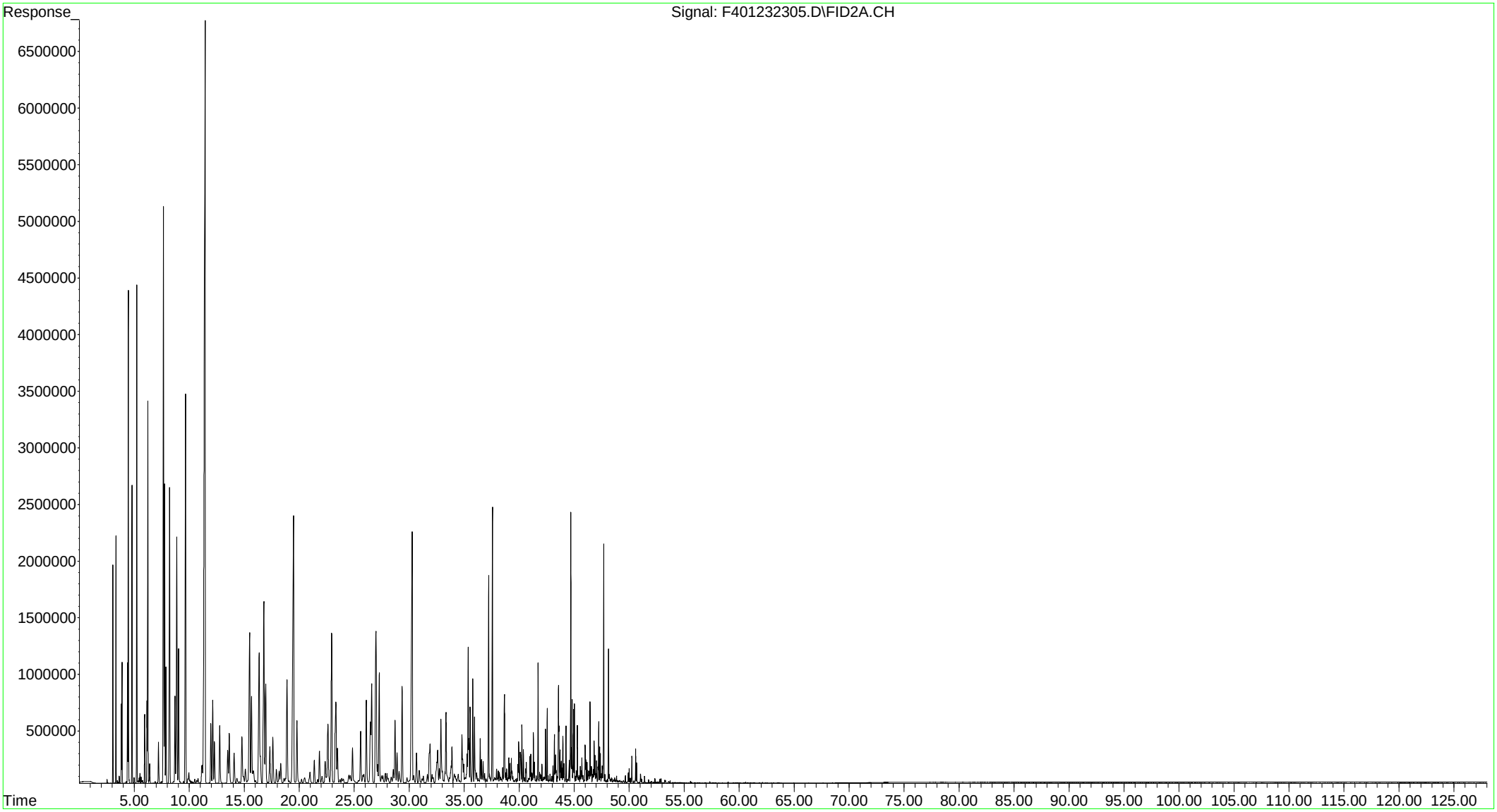

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Sample Name: ans412292201
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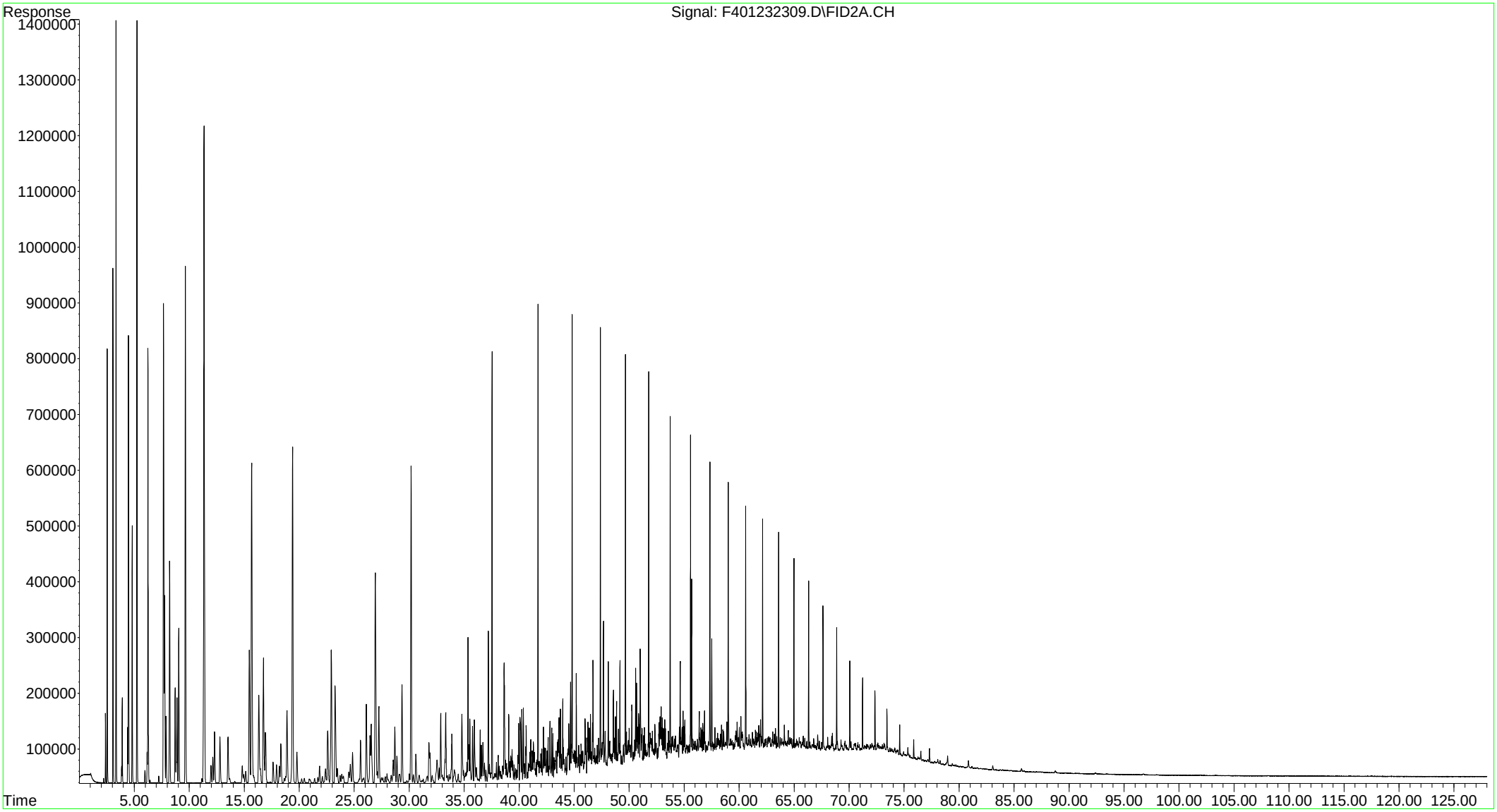
Vial Number: 55



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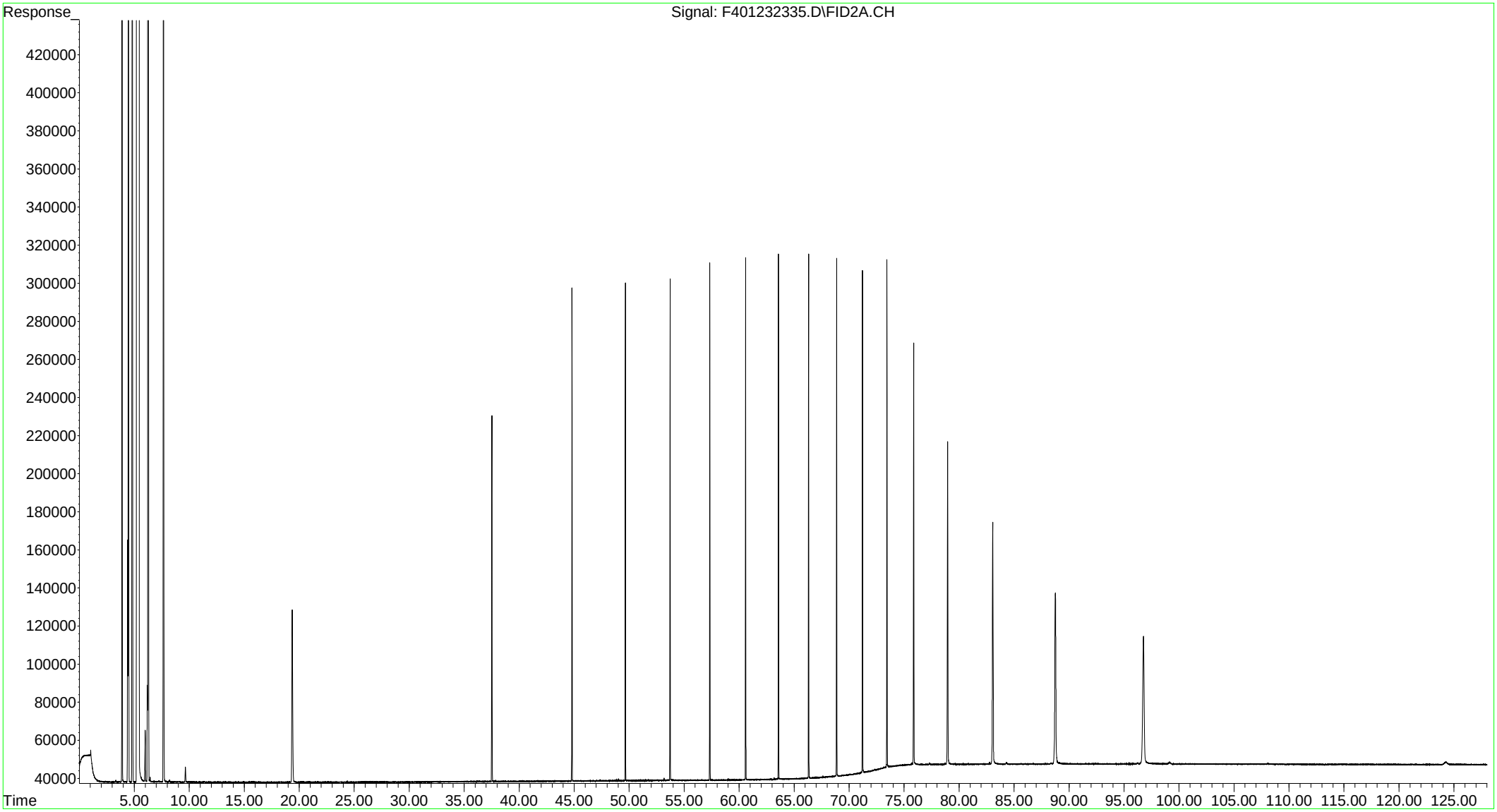
Instrument : PAH 4
Sample Name: CCV
Misc Info :
Vial Number: 68



ChemQuants™
ENVIRONMENTAL FORENSICS

Client: William Schmidt

ATTN: Ransom Consulting, LLC

Project#: 0272

Project name: Former Philadelphia Energy Solutions and Marketing Ref.

Laboratory#: L2303552

Interpreter

March 27, 2023

William Schmidt
Ransom Consulting, LLC
2127 Hamilton Avenue
Hamilton, NJ 08619

CQ Project# 0272
Project Name: Former Philadelphia Energy Solutions and Marketing Ref.

Introduction

I am the principal at ChemQuants, LLC, an environmental forensics firm in Santa Barbara, California. I received bachelor's degrees in Analytical Chemistry and Environmental Science from Florida International University and a Master's in Analytical Chemistry from Florida International University. My professional experience has focused on oil spill environmental forensics. My specialties include petroleum release investigations on coastal waterways and subsurface environments at petroleum terminals and fueling stations and "big environmental data" chemometrics and data visualization. Besides being chair at scientific conferences, I have authored numerous publications and presentations to my peers.

I was asked by Ransom Consulting, LLC, to provide expert opinions regarding environmental forensics relating to one liquid-phase hydrocarbon ("LPH") sample.

I was asked to answer the following question:

- What are the chemical source characteristics of the LPHs expressed in the samples?
- Was it possible to age constrain the fugitive petroleum release(s)?
- How does the project sample fingerprint in the LPHs compare?

The client communicated the following project detail:

- Tank 281 is an AST used primarily to store heavy gas oil ("HGO").
- On September 18, 1999, approximately 84 gallons were reported released from Tank 281.
- PADEP was notified on September 19, 1999, and Incident No. 30777 was assigned by the PADEP.
- On November 24, 2001, approximately 200 gallons of gas oil was reportedly released from Tank 281
- PADEP was notified on November 24, 2001, and Incident No. 5913 was assigned by the PADEP.
- The approximate depth to the groundwater table on site is 6 to 12 feet.
- The general lithology of the site above the water table is "More Sandy than Silty."

Client ID	Lab ID	Date Collected	Date Received	Matrix	C3-C44 Whole Oil GC/FID	Alkylated PAHs & Biomarkers
TANK-281-LNAPL-20230118	L2303552-01	1/8/2023	1/20/2023	LPH	X	X

The sample was delivered to Alpha Analytical, Inc. (Mansfield, MA) and analyzed with the following analytical methods[1]:

1) Whole Oil fingerprinting by GC/FID / EPA 8015B (Mod.)
2) Alkylated PAHs by GC/MS / EPA 8270D-SIM(M) (Full Scan Acquisition Included)

Investigative methodology

The forensics quality chemical data were evaluated by an experienced environmental forensics expert that employed investigation techniques typically used to understand the nature of petroleum releases in the environment.

Refinery process exposure lines of evidence were based on PAHs' a) thermodynamic stabilities. Source discriminating lines of evidence were based on the – a) boiling ranges distributions of the unresolved complex mixture "UCM" (GC/FID "hump" characteristics) and n-paraffins, b) saturate biomarker distributions - terpanes, steranes, triaromatic steranes, and monoaromatic steranes. Weathering diagnostics lines of evidence were based on distributions of compounds with different susceptibility to environmental alterations by evaporation and dissolution.

Results and Discussion

Weathering Properties

Dissolution, evaporation, and biodegradation (other modes not listed)[2] are dominant modes of oil weathering in spill scenarios. Evaluation of chemical parameters that effectively "reflect" chemical alterations from weathering are valuable as additional lines of forensics evidence. For instance, petroleum may become somewhat altered after a fugitive release, and those changes will need to be explained in the overall context of a defensible petroleum forensics report. Essentially, most differences between the oils in question must be presented within a logical weathering "framework" or trackable errors caused by instrumental uncertainties. A successful interpretation of petroleum weathering dynamics in a fugitive spill scenario will likely bolster the assertions made from the oil correlation study, as well as support fate and transport lines of evidence.

Weathering properties were assessed with a qualitative review of middle distillate range hydrocarbons; n-paraffins are the first to be depleted by biodegradation of the semi-volatile hydrocarbon range ("SVOC") and serve as the primary determinant for biodegradation[3]. On the formal basis of the Kaplan Stages in biodegradation of petroleum[4], TANK-281-LNAPL-20230118 can be described as being severely biodegraded to the extent of stage 5, given the ~>98% removal of n-paraffins (85 m/z), ~>75% removal of alkylcyclohexanes (83 m/z), and the nearly undepleted state of the more resistant to biodegradation isoparaffins (figure 1).

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: *Introduction to Environmental Forensics, 2nd Ed.*, B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.
[2] Wang, Z., and M. Fingas. "Oil and petroleum product fingerprinting analysis by gas chromatographic techniques." *Chromatographic Science Series* 93 (2006): 1027.
[3] Wenger, Lloyd M., Cara L. Davis, and Gary H. Isaksen. "Multiple controls on petroleum biodegradation and impact on oil quality." *SPE Reservoir Evaluation & Engineering* 5.05 (2002): 375-383.
[4] Kaplan, Isaac R., et al. "Forensic environmental geochemistry: differentiation of fuel-types, their sources and release time." *Organic Geochemistry* 27.5-6 (1997): 289-317.

Refining Properties

Properties - The shape and boiling range of the UCM in the whole oil chromatogram revealed the dominance of a petroleum type with hydrocarbons spanning the residual petroleum range to the residual range (~C18-~C32+). In addition, aromatic richness was evident in the prominence of alkyl naphthalene and alkyl phenanthrene isomers relative to the residual range UCM (figure1). The distribution of the n-paraffin targeted ion trace (85 m/z) revealed the complete removal of n-paraffins. The distribution of the alkylcyclohexanes targeted ion trace (83 m/z) revealed an ~>75% depletion of the light to middle distillate range petroleum biomarkers (figure 1). The PAH bar graph in figure 1 revealed enrichments of higher alkylated naphthalenes ("N3" to "N4"), higher alkylated fluorenes ("F2" to "F3"), alkylated phenanthrenes/anthracenes distributions dominated by "P2" and "P3", significant enrichment of sulfur heterocyclic aromatic hydrocarbons ("SPAHs") - dibenzothiophenes ("DBTs") and naphthobenzothiophenes ("NBTs"), and significant enrichments of residual range alkylated chrysenes ("BC"). The petroleum biomarker bar graph in figure 1 revealed the presence of residual range biomarkers, e.g., terpanes (191 m/z), steranes (217 and 218 m/z), and triaromatic steranes (231 m/z).

Refinery Exposure Discrimination and Characterization - The following chemical attributes were reviewed to help classify whether the petroleum was refined. Depending on the refinery objective, HGO feedstocks may be exposed to atmospheric distillation, thermal cracking (visbreaking), or vacuum distillation. Compared to the original crude oil feedstock, the effect of refinery processes has been shown to alter the distribution of specific biomarkers that are less thermodynamically stable[5]. Furthermore, second-order effects from catalytic cracking refinery processes are reflected in the distribution of 5 methyl phenanthrene isomers. Relative abundances of the less thermodynamically stable 9/4-methyl phenanthrene and 1-methyl phenanthrene isomers (relative to 3-methyl phenanthrene and 2-methyl phenanthrene) are decreased under the stresses of refinery processes. Conversely, 2-methyl anthracene (2-MA) is typically produced during vacuum distillation and cracking and is absent in most crude oils[6]. The rightward skew of C1 phenanthrene/anthracene isomers in combination with 2-MA enrichment and the specific relationships of C29 sterane isomers (as $\beta\beta/(\beta\beta+\alpha\alpha)$ =0.49) confirms that the petroleum is likely an HGO and not a Heavy Fuel Oil ("HFO") since a fraction of an HFO is typically derived from a more thermodynamically aggressive catalytic cracking process[7] (figure 1).

Age Estimation - The stage 5 level of biodegradation per the Kaplan Stage, in combination with the moderate level 4-5 weathering potential regime at the site (moderate level estimated from –6-12 ft to G.W. & More Sandy than Silty lithology), indicates that the HGO in TANK-281-LNAPL-20230118 may have experienced a residence time in the environment of ~18 to 28 years.

[5] Peters, Kenneth E., Clifford C. Walters, and J. Michael Moldowan. The biomarker guide. Vol. 1. Cambridge University Press, 2005.
[6] Radke, Matthias, et al. "Aromatic components of coal: relation of distribution pattern to rank." Geochimica et Cosmochimica Acta 46.10 (1982): 1831-1848
[7] Speight, James G. *The chemistry and technology of petroleum*. CRC press, 2014.

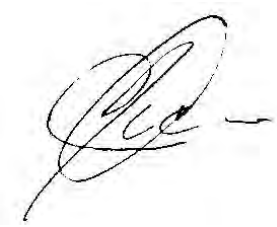
Conclusions

The preponderance of the evidence shows that the LPH in TANK-281-LNAPL-20230118 was likely an HGO petroleum product. A 'time of release' estimation was derived for TANK-281-LNAPL-20230118 to be approximately 18 to 28 years.

Upon receipt of additional information, I reserve the right to modify and supplement my opinions outlined in this report.

You may email questions or concerns to markcejas@chemquants.com regarding chemistry data or interpretation.

Respectfully submitted,



Mark Jonathan Cejas
Principal

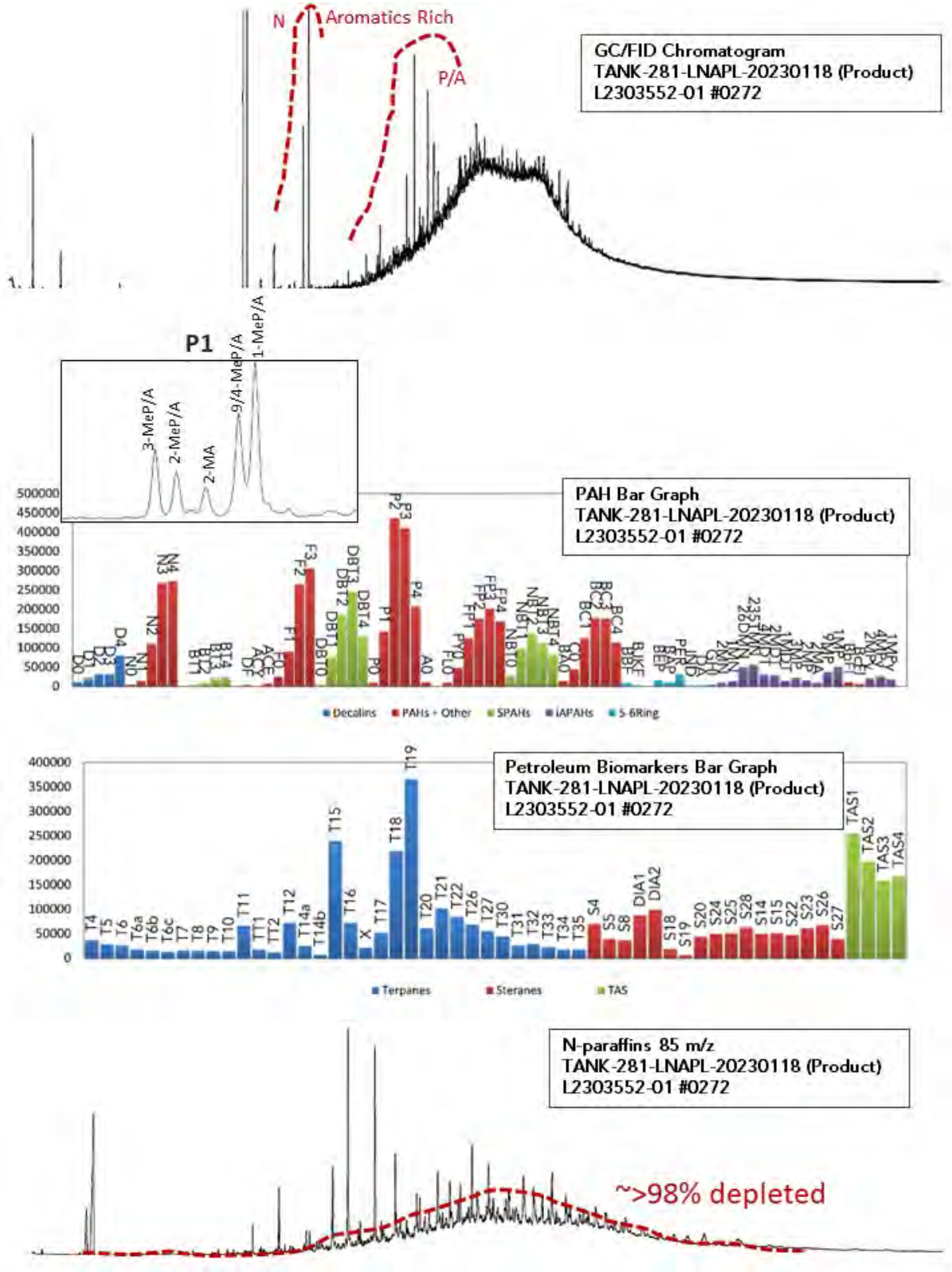


Figure 1. Fingerprint Mosaics™ for product samples.

ChemQuants, LLC
Santa Barbara, CA 93101
www.ChemQuants.com

Interpreter

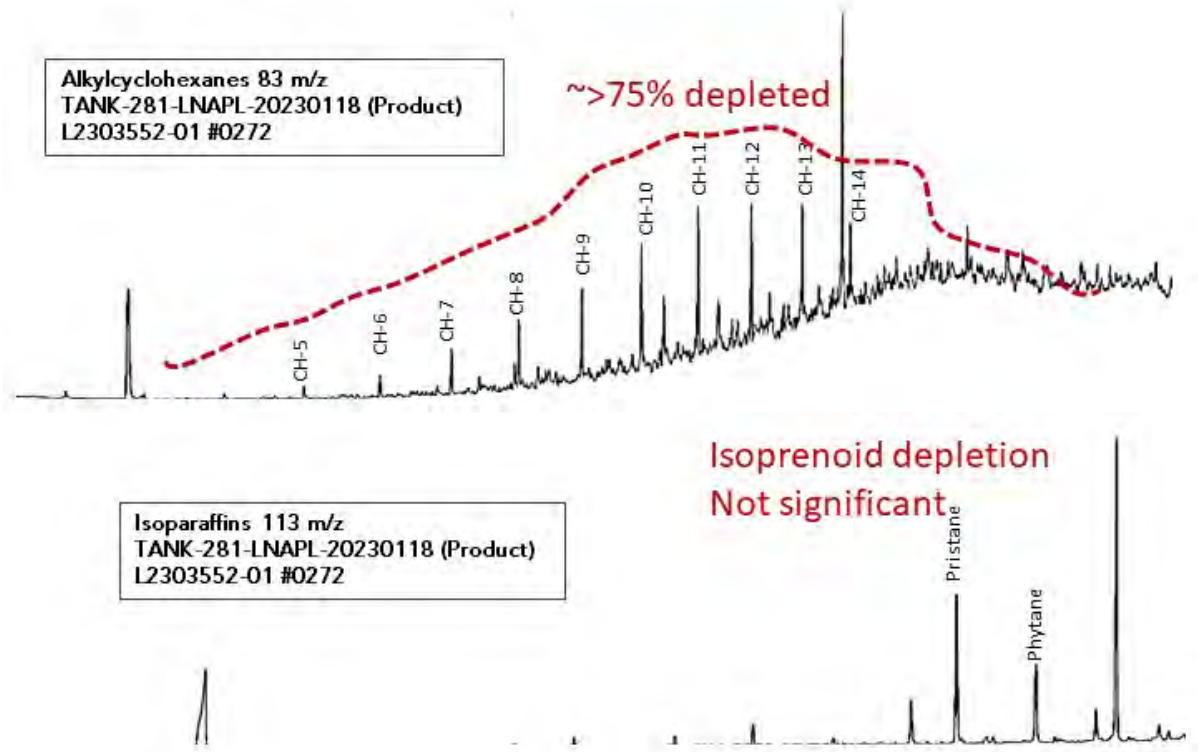


Figure 2. Fingerprint Mosaics™ for product samples.

ANALYTICAL REPORT

Lab Number:	L2268455
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/13/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268455-01	GPR281-01-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:30	12/06/22
L2268455-02	GPR281-07-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:45	12/06/22
L2268455-03	GPR281-08-SS01	SOIL	PHILADELPHIA, PA	12/06/22 09:55	12/06/22
L2268455-04	GPR281-10-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:05	12/06/22
L2268455-05	GPR281-11-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:20	12/06/22
L2268455-06	GPR281-12-SS01	SOIL	PHILADELPHIA, PA	12/06/22 10:30	12/06/22
L2268455-07	GPR282-01-SS01	SOIL	PHILADELPHIA, PA	12/06/22 11:30	12/06/22
L2268455-08	GPR282-03-SS01	SOIL	PHILADELPHIA, PA	12/06/22 11:40	12/06/22
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L2268455-22	GPR284-13-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:50	12/06/22
L2268455-23	GPR284-14-SS01	SOIL	PHILADELPHIA, PA	12/06/22 14:55	12/06/22
L2268455-24	GPR284-15-SS01	SOIL	PHILADELPHIA, PA	12/06/22 15:00	12/06/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268455-25	DUP-52	SOIL	PHILADELPHIA, PA	12/06/22 11:00	12/06/22
L2268455-26	TB-221206	WATER	PHILADELPHIA, PA	12/06/22 00:00	12/06/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2268455-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (285%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268455-12: The internal standard (IS) response for fluorobenzene (24%), chlorobenzene-d5 (27%), and 1,4-dichlorobenzene-d4 (27%) and surrogate recoveries for 1,2-dichloroethane-d4 (133%) and dibromofluoromethane (135%) were outside the acceptance criteria. A second low-level vial was analyzed, but no data was acquired due to instrument error. Since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2268455-16: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2268455-16: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (194%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268455-17: The internal standard (IS) response(s) for 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (131%) and 4-bromofluorobenzene (293%) were outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (46%) and 4-bromofluorobenzene (196%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

Case Narrative (continued)

Microextractables

The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2268455-26, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics

L2268455-06D, -12D, -17D, and -22D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2268455-13: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

Total Metals

The WG1720509-3 MS recovery for lead (13%), performed on L2268455-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 12/13/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:33
Analyst: JIC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00052	J	mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 03:48
Analyst: JIC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0016	0.00016	1
Benzene	ND		mg/kg	0.00040	0.00013	1
1,2-Dichloroethane	ND		mg/kg	0.00081	0.00021	1
Toluene	ND		mg/kg	0.00081	0.00044	1
1,2-Dibromoethane	ND		mg/kg	0.00040	0.00024	1
Ethylbenzene	ND		mg/kg	0.00081	0.00011	1
p/m-Xylene	ND		mg/kg	0.0016	0.00045	1
o-Xylene	0.00084		mg/kg	0.00081	0.00023	1
Xylenes, Total	0.00084		mg/kg	0.00081	0.00023	1
Isopropylbenzene	0.00015	J	mg/kg	0.00081	0.00008	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0016	0.00016	1
1,2,4-Trimethylbenzene	0.0024		mg/kg	0.0016	0.00027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:59
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00075	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00081	1
1,2-Dibromoethane	ND		mg/kg	0.00075	0.00044	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00084	1
o-Xylene	ND		mg/kg	0.0015	0.00044	1
Xylenes, Total	ND		mg/kg	0.0015	0.00044	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.00067	J	mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 22:26
Analyst: JIC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00044	1
Benzene	ND		mg/kg	0.0011	0.00036	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00056	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00064	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00064	1
Xylenes, Total	ND		mg/kg	0.0022	0.00064	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00042	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0044	0.00073	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 22:53
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00037	J	mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00038	1
Ethylbenzene	0.00021	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0012	J	mg/kg	0.0026	0.00072	1
o-Xylene	0.00064	J	mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0018	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00045	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0012	J	mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	75		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 23:20
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	0.00036	J	mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00059	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	0.00016	J	mg/kg	0.0011	0.00015	1
p/m-Xylene	ND		mg/kg	0.0022	0.00061	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	ND		mg/kg	0.0011	0.00032	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.00038	J	mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/08/22 23:47
Analyst: JIC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00073	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00028	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.00053	J	mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 00:14
Analyst: JIC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00064	1
o-Xylene	0.00045	J	mg/kg	0.0011	0.00033	1
Xylenes, Total	0.00045	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.0013		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00027	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 00:40
Analyst: JIC
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00052	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	ND		mg/kg	0.0036	0.0010	1
o-Xylene	ND		mg/kg	0.0018	0.00052	1
Xylenes, Total	ND		mg/kg	0.0018	0.00052	1
Isopropylbenzene	ND		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 01:07
Analyst: JIC
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.00090	J	mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:09
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00039	1
Benzene	ND		mg/kg	0.00098	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00050	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.00098	0.00057	1
Ethylbenzene	0.00029	J	mg/kg	0.0020	0.00028	1
p/m-Xylene	0.0017	J	mg/kg	0.0039	0.0011	1
o-Xylene	0.0038		mg/kg	0.0020	0.00057	1
Xylenes, Total	0.0055	J	mg/kg	0.0020	0.00057	1
Isopropylbenzene	0.0017	J	mg/kg	0.0020	0.00021	1
1,3,5-Trimethylbenzene	0.0014	J	mg/kg	0.0039	0.00038	1
1,2,4-Trimethylbenzene	0.0057		mg/kg	0.0039	0.00065	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**285**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 04:41
Analyst: JIC
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.30	0.031	1
Benzene	0.094		mg/kg	0.076	0.025	1
1,2-Dichloroethane	ND		mg/kg	0.15	0.039	1
Toluene	0.44		mg/kg	0.15	0.083	1
1,2-Dibromoethane	ND		mg/kg	0.076	0.045	1
Ethylbenzene	0.11	J	mg/kg	0.15	0.021	1
p/m-Xylene	0.30		mg/kg	0.30	0.085	1
o-Xylene	0.12	J	mg/kg	0.15	0.044	1
Xylenes, Total	0.42	J	mg/kg	0.15	0.044	1
Isopropylbenzene	0.072	J	mg/kg	0.15	0.017	1
1,3,5-Trimethylbenzene	0.11	J	mg/kg	0.30	0.029	1
1,2,4-Trimethylbenzene	0.22	J	mg/kg	0.30	0.051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:03
Analyst: NLK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00085	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00085	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00095	1
o-Xylene	ND		mg/kg	0.0017	0.00049	1
Xylenes, Total	ND		mg/kg	0.0017	0.00049	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.00033	J	mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.00087	J	mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**133**	Q	70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	**135**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 01:33
Analyst: JIC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00028	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 02:00
Analyst: JIC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00032	1
Benzene	ND		mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00085	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00088	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 02:27
Analyst: JIC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00068	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00035	1
Toluene	ND		mg/kg	0.0014	0.00074	1
1,2-Dibromoethane	ND		mg/kg	0.00068	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00076	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 05:08
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.12	0.012	1
Benzene	0.023	J	mg/kg	0.029	0.0097	1
1,2-Dichloroethane	ND		mg/kg	0.058	0.015	1
Toluene	ND		mg/kg	0.058	0.032	1
1,2-Dibromoethane	ND		mg/kg	0.029	0.017	1
Ethylbenzene	0.087		mg/kg	0.058	0.0082	1
p/m-Xylene	0.20		mg/kg	0.12	0.033	1
o-Xylene	0.096		mg/kg	0.058	0.017	1
Xylenes, Total	0.30		mg/kg	0.058	0.017	1
Isopropylbenzene	0.081		mg/kg	0.058	0.0064	1
1,3,5-Trimethylbenzene	0.54		mg/kg	0.12	0.011	1
1,2,4-Trimethylbenzene	0.75		mg/kg	0.12	0.019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:36
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	0.0043		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	0.0023		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.010		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.025		mg/kg	0.0029	0.00082	1
o-Xylene	0.013		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.038		mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.015		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	0.11		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.13		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**194**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/10/22 16:58
Analyst: JIC
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	0.00073	J	mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	0.00098	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.00097	J	mg/kg	0.0026	0.00073	1
o-Xylene	0.0013		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0023	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0058		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0016	J	mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	**131**	Q	70-130
4-Bromofluorobenzene	**293**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17 R
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:42
Analyst: NLK
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00077	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	ND		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	0.00047	J	mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00086	1
o-Xylene	0.0011	J	mg/kg	0.0015	0.00045	1
Xylenes, Total	0.0011	J	mg/kg	0.0015	0.00045	1
Isopropylbenzene	0.0026		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	0.00054	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.00084	J	mg/kg	0.0031	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**196**	Q	70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:52
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 13:26
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0013	J	mg/kg	0.0026	0.00074	1
o-Xylene	0.0011	J	mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0024	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0013		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 13:52
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00054	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00059	1
1,2-Dibromoethane	ND		mg/kg	0.00054	0.00032	1
Ethylbenzene	ND		mg/kg	0.0011	0.00015	1
p/m-Xylene	0.0011	J	mg/kg	0.0022	0.00061	1
o-Xylene	0.00086	J	mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0020	J	mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.00096	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.00059	J	mg/kg	0.0022	0.00036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 14:18
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.00099	J	mg/kg	0.0029	0.00081	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.00099	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 14:44
Analyst: JIC
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0011	J	mg/kg	0.0033	0.00091	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	0.0011	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 15:11
Analyst: JIC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	0.00076	J	mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	0.00076	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:57
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.00020	J	mg/kg	0.00053	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00027	1
Toluene	ND		mg/kg	0.0010	0.00057	1
1,2-Dibromoethane	ND		mg/kg	0.00053	0.00031	1
Ethylbenzene	ND		mg/kg	0.0010	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00059	1
o-Xylene	ND		mg/kg	0.0010	0.00031	1
Xylenes, Total	ND		mg/kg	0.0010	0.00031	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/09/22 16:03
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0046	0.00047	1
Benzene	ND		mg/kg	0.0012	0.00039	1
1,2-Dichloroethane	ND		mg/kg	0.0023	0.00060	1
Toluene	ND		mg/kg	0.0023	0.0013	1
1,2-Dibromoethane	ND		mg/kg	0.0012	0.00068	1
Ethylbenzene	ND		mg/kg	0.0023	0.00033	1
p/m-Xylene	ND		mg/kg	0.0046	0.0013	1
o-Xylene	ND		mg/kg	0.0023	0.00068	1
Xylenes, Total	ND		mg/kg	0.0023	0.00068	1
Isopropylbenzene	ND		mg/kg	0.0023	0.00025	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0046	0.00045	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0046	0.00078	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-26
Client ID: TB-221206
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 00:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:15
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-26
Client ID: TB-221206
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 00:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/07/22 19:35
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/07/22 19:15
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 26 Batch: WG1720722-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268455

Project Number: 200.00135.006 **Report Date:** 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:06
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-10,13-15 Batch: WG1721432-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/08/22 21:06
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12,16 Batch: WG1721434-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 26 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:01
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 19-23,25 Batch: WG1722187-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/10/22 11:26
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 17 Batch: WG1722219-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268455

Project Number: 200.00135.006 **Report Date:** 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 11-12,16-18,24 Batch: WG1722625-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 26 Batch: WG1720722-3 WG1720722-4								
Methyl tert butyl ether	92		92		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		99		70-130
Toluene-d8	103		104		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	99		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-10,13-15 Batch: WG1721432-3 WG1721432-4								
Methyl tert butyl ether	85		87		66-130	2		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	84		86		70-130	2		30
Toluene	96		96		70-130	0		30
1,2-Dibromoethane	90		92		70-130	2		30
Ethylbenzene	95		95		70-130	0		30
p/m-Xylene	97		97		70-130	0		30
o-Xylene	94		93		70-130	1		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	95		94		70-130	1		30
1,2,4-Trimethylbenzene	93		92		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		96		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	96		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12,16 Batch: WG1721434-3 WG1721434-4								
Methyl tert butyl ether	85		87		66-130	2		30
Benzene	93		93		70-130	0		30
1,2-Dichloroethane	84		86		70-130	2		30
Toluene	96		96		70-130	0		30
1,2-Dibromoethane	90		92		70-130	2		30
Ethylbenzene	95		95		70-130	0		30
p/m-Xylene	97		97		70-130	0		30
o-Xylene	94		93		70-130	1		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	95		94		70-130	1		30
1,2,4-Trimethylbenzene	93		92		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		96		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	96		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 26		Batch: WG1721462-2						
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 19-23,25 Batch: WG1722187-3 WG1722187-4								
Methyl tert butyl ether	101		104		66-130	3		30
Benzene	103		101		70-130	2		30
1,2-Dichloroethane	94		94		70-130	0		30
Toluene	101		100		70-130	1		30
1,2-Dibromoethane	99		102		70-130	3		30
Ethylbenzene	108		107		70-130	1		30
p/m-Xylene	98		97		70-130	1		30
o-Xylene	95		95		70-130	0		30
Isopropylbenzene	96		94		70-130	2		30
1,3,5-Trimethylbenzene	105		103		70-130	2		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	105		104		70-130
Dibromofluoromethane	94		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 17 Batch: WG1722219-3 WG1722219-4								
Methyl tert butyl ether	92		89		66-130	3		30
Benzene	106		103		70-130	3		30
1,2-Dichloroethane	95		96		70-130	1		30
Toluene	103		98		70-130	5		30
1,2-Dibromoethane	102		104		70-130	2		30
Ethylbenzene	105		98		70-130	7		30
p/m-Xylene	106		98		70-130	8		30
o-Xylene	105		98		70-130	7		30
Isopropylbenzene	101		94		70-130	7		30
1,3,5-Trimethylbenzene	101		96		70-130	5		30
1,2,4-Trimethylbenzene	100		96		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		91		70-130
Toluene-d8	99		101		70-130
4-Bromofluorobenzene	92		89		70-130
Dibromofluoromethane	92		93		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 11-12,16-18,24 Batch: WG1722625-3 WG1722625-4								
Methyl tert butyl ether	88		90		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	92		92		70-130	0		30
Toluene	91		92		70-130	1		30
1,2-Dibromoethane	97		97		70-130	0		30
Ethylbenzene	92		92		70-130	0		30
p/m-Xylene	98		98		70-130	0		30
o-Xylene	96		95		70-130	1		30
Isopropylbenzene	96		95		70-130	1		30
1,3,5-Trimethylbenzene	95		96		70-130	1		30
1,2,4-Trimethylbenzene	96		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		93		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	105		105		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 26 QC Batch ID: WG1721462-3 QC Sample: L2268455-26 Client ID: TB-221206													
1,2-Dibromoethane	ND	0.252	0.250	99		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 20:37
Analyst: JG
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.5		mg/kg	0.24	0.029	1
Fluorene	0.20	J	mg/kg	0.24	0.024	1
Phenanthrene	0.71		mg/kg	0.14	0.029	1
Anthracene	0.23		mg/kg	0.14	0.047	1
Pyrene	0.32		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.24		mg/kg	0.14	0.027	1
Chrysene	0.26		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.34		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.30		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.19		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:01
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.032	J	mg/kg	0.19	0.023	1
Fluorene	0.14	J	mg/kg	0.19	0.018	1
Phenanthrene	0.33		mg/kg	0.11	0.023	1
Anthracene	0.061	J	mg/kg	0.11	0.037	1
Pyrene	0.38		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.19		mg/kg	0.11	0.021	1
Chrysene	0.55		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.12		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.061	J	mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.044	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:25
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.4		mg/kg	0.24	0.029	1
Fluorene	0.21	J	mg/kg	0.24	0.023	1
Phenanthrene	0.70		mg/kg	0.14	0.029	1
Anthracene	0.24		mg/kg	0.14	0.046	1
Pyrene	0.55		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.42		mg/kg	0.14	0.026	1
Chrysene	0.47		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.58		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.51		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.32		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 21:49
Analyst: JG
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.9		mg/kg	0.25	0.031	1
Fluorene	0.52		mg/kg	0.25	0.025	1
Phenanthrene	2.4		mg/kg	0.15	0.031	1
Anthracene	0.79		mg/kg	0.15	0.049	1
Pyrene	2.8		mg/kg	0.15	0.025	1
Benzo(a)anthracene	1.9		mg/kg	0.15	0.028	1
Chrysene	1.9		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	2.0		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.9		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	1.0		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 22:13
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.068	J	mg/kg	0.18	0.023	1
Fluorene	0.051	J	mg/kg	0.18	0.018	1
Phenanthrene	0.16		mg/kg	0.11	0.023	1
Anthracene	0.042	J	mg/kg	0.11	0.036	1
Pyrene	0.32		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.11		mg/kg	0.11	0.021	1
Chrysene	0.36		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.17		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.10	J	mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.086	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06 D
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:42
Analyst: MG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.93	0.11	5
Fluorene	0.092	J	mg/kg	0.93	0.090	5
Phenanthrene	0.30	J	mg/kg	0.56	0.11	5
Anthracene	ND		mg/kg	0.56	0.18	5
Pyrene	0.54	J	mg/kg	0.56	0.092	5
Benzo(a)anthracene	0.26	J	mg/kg	0.56	0.10	5
Chrysene	0.64		mg/kg	0.56	0.097	5
Benzo(b)fluoranthene	0.19	J	mg/kg	0.56	0.16	5
Benzo(a)pyrene	ND		mg/kg	0.74	0.23	5
Benzo(ghi)perylene	0.11	J	mg/kg	0.74	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:44
Analyst: JG
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.4		mg/kg	0.21	0.026	1
Fluorene	0.69		mg/kg	0.21	0.020	1
Phenanthrene	4.3		mg/kg	0.12	0.026	1
Anthracene	1.3		mg/kg	0.12	0.041	1
Pyrene	3.8		mg/kg	0.12	0.021	1
Benzo(a)anthracene	2.2		mg/kg	0.12	0.024	1
Chrysene	1.8		mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	2.2		mg/kg	0.12	0.035	1
Benzo(a)pyrene	1.8		mg/kg	0.17	0.051	1
Benzo(ghi)perylene	1.0		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:56
Analyst: JG
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.20	0.025	1
Fluorene	0.19	J	mg/kg	0.20	0.020	1
Phenanthrene	0.82		mg/kg	0.12	0.025	1
Anthracene	0.34		mg/kg	0.12	0.040	1
Pyrene	0.44		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.30		mg/kg	0.12	0.023	1
Chrysene	0.47		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.38		mg/kg	0.12	0.034	1
Benzo(a)pyrene	0.44		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	0.50		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:20
Analyst: JG
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.86		mg/kg	0.28	0.034	1
Fluorene	0.37		mg/kg	0.28	0.027	1
Phenanthrene	2.8		mg/kg	0.16	0.034	1
Anthracene	0.99		mg/kg	0.16	0.054	1
Pyrene	3.0		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.1		mg/kg	0.16	0.031	1
Chrysene	1.8		mg/kg	0.16	0.029	1
Benzo(b)fluoranthene	1.6		mg/kg	0.16	0.046	1
Benzo(a)pyrene	1.5		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	0.88		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 04:12
Analyst: MG
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 17:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.2		mg/kg	0.26	0.031	1
Fluorene	0.38		mg/kg	0.26	0.025	1
Phenanthrene	1.7		mg/kg	0.15	0.031	1
Anthracene	0.52		mg/kg	0.15	0.050	1
Pyrene	1.6		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.96		mg/kg	0.15	0.029	1
Chrysene	1.0		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.3		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.2		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.71		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 14:32
Analyst: JG
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.7		mg/kg	0.27	0.033	1
Fluorene	1.5		mg/kg	0.27	0.027	1
Phenanthrene	4.5		mg/kg	0.16	0.033	1
Anthracene	1.5		mg/kg	0.16	0.054	1
Pyrene	4.4		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.0		mg/kg	0.16	0.031	1
Chrysene	2.2		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	2.2		mg/kg	0.16	0.046	1
Benzo(a)pyrene	2.0		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.3		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12 D
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 14:56
Analyst: JG
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.3		mg/kg	2.6	0.32	10
Fluorene	8.2		mg/kg	2.6	0.25	10
Phenanthrene	28.		mg/kg	1.6	0.32	10
Anthracene	9.6		mg/kg	1.6	0.51	10
Pyrene	26.		mg/kg	1.6	0.26	10
Benzo(a)anthracene	13.		mg/kg	1.6	0.29	10
Chrysene	12.		mg/kg	1.6	0.27	10
Benzo(b)fluoranthene	14.		mg/kg	1.6	0.44	10
Benzo(a)pyrene	12.		mg/kg	2.1	0.63	10
Benzo(ghi)perylene	5.9		mg/kg	2.1	0.30	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	41		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 15:20
Analyst: JG
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	9.6		mg/kg	0.58	0.070	1
Fluorene	0.67		mg/kg	0.58	0.056	1
Phenanthrene	2.4		mg/kg	0.35	0.070	1
Anthracene	0.85		mg/kg	0.35	0.11	1
Pyrene	0.81		mg/kg	0.35	0.058	1
Benzo(a)anthracene	0.50		mg/kg	0.35	0.065	1
Chrysene	0.53		mg/kg	0.35	0.060	1
Benzo(b)fluoranthene	0.58		mg/kg	0.35	0.098	1
Benzo(a)pyrene	0.52		mg/kg	0.46	0.14	1
Benzo(ghi)perylene	0.59		mg/kg	0.46	0.068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 15:44
Analyst: JG
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.2		mg/kg	0.22	0.027	1
Fluorene	0.35		mg/kg	0.22	0.021	1
Phenanthrene	1.0		mg/kg	0.13	0.027	1
Anthracene	0.39		mg/kg	0.13	0.043	1
Pyrene	1.9		mg/kg	0.13	0.022	1
Benzo(a)anthracene	1.5		mg/kg	0.13	0.025	1
Chrysene	1.3		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	1.6		mg/kg	0.13	0.037	1
Benzo(a)pyrene	1.4		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	0.64		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:08
Analyst: JG
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.9		mg/kg	0.23	0.028	1
Fluorene	0.45		mg/kg	0.23	0.022	1
Phenanthrene	1.4		mg/kg	0.14	0.028	1
Anthracene	0.58		mg/kg	0.14	0.045	1
Pyrene	2.0		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.8		mg/kg	0.14	0.026	1
Chrysene	1.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.2		mg/kg	0.14	0.038	1
Benzo(a)pyrene	2.0		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.2		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:32
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.65		mg/kg	0.18	0.023	1
Fluorene	0.35		mg/kg	0.18	0.018	1
Phenanthrene	1.0		mg/kg	0.11	0.022	1
Anthracene	0.18		mg/kg	0.11	0.036	1
Pyrene	0.91		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.41		mg/kg	0.11	0.021	1
Chrysene	1.1		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.45		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.32		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.25		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17 D
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 16:56
Analyst: JG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.93	J	mg/kg	1.1	0.13	5
Fluorene	ND		mg/kg	1.1	0.11	5
Phenanthrene	0.62	J	mg/kg	0.66	0.13	5
Anthracene	ND		mg/kg	0.66	0.21	5
Pyrene	0.42	J	mg/kg	0.66	0.11	5
Benzo(a)anthracene	0.37	J	mg/kg	0.66	0.12	5
Chrysene	0.56	J	mg/kg	0.66	0.11	5
Benzo(b)fluoranthene	0.38	J	mg/kg	0.66	0.18	5
Benzo(a)pyrene	0.29	J	mg/kg	0.88	0.27	5
Benzo(ghi)perylene	0.36	J	mg/kg	0.88	0.13	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:21
Analyst: JG
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.92		mg/kg	0.20	0.024	1
Fluorene	0.25		mg/kg	0.20	0.019	1
Phenanthrene	0.47		mg/kg	0.12	0.024	1
Anthracene	0.25		mg/kg	0.12	0.038	1
Pyrene	1.2		mg/kg	0.12	0.020	1
Benzo(a)anthracene	1.2		mg/kg	0.12	0.022	1
Chrysene	1.0		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	1.2		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.1		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.48		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	117		23-120
2-Fluorobiphenyl	97		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 17:45
Analyst: JG
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.2		mg/kg	0.23	0.028	1
Fluorene	0.69		mg/kg	0.23	0.022	1
Phenanthrene	2.3		mg/kg	0.14	0.028	1
Anthracene	0.78		mg/kg	0.14	0.044	1
Pyrene	3.2		mg/kg	0.14	0.022	1
Benzo(a)anthracene	2.8		mg/kg	0.14	0.025	1
Chrysene	2.5		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	3.5		mg/kg	0.14	0.038	1
Benzo(a)pyrene	3.0		mg/kg	0.18	0.055	1
Benzo(ghi)perylene	1.4		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:09
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.2		mg/kg	0.20	0.025	1
Fluorene	0.45		mg/kg	0.20	0.020	1
Phenanthrene	2.3		mg/kg	0.12	0.025	1
Anthracene	0.72		mg/kg	0.12	0.040	1
Pyrene	3.3		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.8		mg/kg	0.12	0.023	1
Chrysene	2.4		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	3.1		mg/kg	0.12	0.034	1
Benzo(a)pyrene	2.8		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	1.3		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 18:33
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.3		mg/kg	0.24	0.029	1
Fluorene	0.26		mg/kg	0.24	0.023	1
Phenanthrene	1.7		mg/kg	0.14	0.029	1
Anthracene	0.66		mg/kg	0.14	0.047	1
Pyrene	3.8		mg/kg	0.14	0.024	1
Benzo(a)anthracene	3.4		mg/kg	0.14	0.027	1
Chrysene	3.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.8		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.2		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	1.6		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22 D
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 17:49
Analyst: MG
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.7		mg/kg	1.4	0.18	5
Fluorene	0.98	J	mg/kg	1.4	0.14	5
Phenanthrene	4.7		mg/kg	0.87	0.18	5
Anthracene	2.7		mg/kg	0.87	0.28	5
Pyrene	23.		mg/kg	0.87	0.14	5
Benzo(a)anthracene	20.		mg/kg	0.87	0.16	5
Chrysene	17.		mg/kg	0.87	0.15	5
Benzo(b)fluoranthene	19.		mg/kg	0.87	0.24	5
Benzo(a)pyrene	17.		mg/kg	1.2	0.35	5
Benzo(ghi)perylene	6.6		mg/kg	1.2	0.17	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	89		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 19:21
Analyst: JG
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.19	0.023	1
Fluorene	0.65		mg/kg	0.19	0.018	1
Phenanthrene	2.7		mg/kg	0.11	0.023	1
Anthracene	0.57		mg/kg	0.11	0.037	1
Pyrene	3.3		mg/kg	0.11	0.019	1
Benzo(a)anthracene	2.5		mg/kg	0.11	0.021	1
Chrysene	2.4		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	2.7		mg/kg	0.11	0.032	1
Benzo(a)pyrene	2.3		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	1.2		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	49		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 19:45
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.049	J	mg/kg	0.19	0.023	1
Fluorene	0.038	J	mg/kg	0.19	0.018	1
Phenanthrene	2.0		mg/kg	0.11	0.023	1
Anthracene	0.52		mg/kg	0.11	0.037	1
Pyrene	3.3		mg/kg	0.11	0.019	1
Benzo(a)anthracene	2.4		mg/kg	0.11	0.021	1
Chrysene	2.4		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	2.7		mg/kg	0.11	0.032	1
Benzo(a)pyrene	2.0		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	1.1		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	86		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA

Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/22 20:09
Analyst: JG
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.1		mg/kg	0.23	0.028	1
Fluorene	0.56		mg/kg	0.23	0.023	1
Phenanthrene	1.5		mg/kg	0.14	0.028	1
Anthracene	0.64		mg/kg	0.14	0.045	1
Pyrene	3.2		mg/kg	0.14	0.023	1
Benzo(a)anthracene	2.9		mg/kg	0.14	0.026	1
Chrysene	2.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	3.6		mg/kg	0.14	0.039	1
Benzo(a)pyrene	3.3		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	1.5		mg/kg	0.19	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/08/22 00:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/07/22 05:11

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-10 Batch: WG1720179-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	77		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/08/22 10:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/07/22 18:22

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 11-25 Batch: WG1720590-1					
Naphthalene	ND		mg/kg	0.17	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	91		30-120
4-Terphenyl-d14	91		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-10 Batch: WG1720179-2 WG1720179-3								
Naphthalene	61		58		40-140	5		50
Fluorene	56		56		40-140	0		50
Phenanthrene	59		58		40-140	2		50
Anthracene	62		60		40-140	3		50
Pyrene	60		57		35-142	5		50
Benzo(a)anthracene	57		58		40-140	2		50
Chrysene	54		54		40-140	0		50
Benzo(b)fluoranthene	55		56		40-140	2		50
Benzo(a)pyrene	57		60		40-140	5		50
Benzo(ghi)perylene	60		59		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	62		58		25-120
Phenol-d6	63		59		10-120
Nitrobenzene-d5	54		53		23-120
2-Fluorobiphenyl	66		64		30-120
2,4,6-Tribromophenol	69		70		10-136
4-Terphenyl-d14	58		61		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 11-25 Batch: WG1720590-2 WG1720590-3								
Naphthalene	79		77		40-140	3		50
Fluorene	83		80		40-140	4		50
Phenanthrene	77		74		40-140	4		50
Anthracene	80		77		40-140	4		50
Pyrene	83		84		35-142	1		50
Benzo(a)anthracene	84		80		40-140	5		50
Chrysene	81		78		40-140	4		50
Benzo(b)fluoranthene	91		89		40-140	2		50
Benzo(a)pyrene	89		88		40-140	1		50
Benzo(ghi)perylene	84		80		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	110		108		23-120
2-Fluorobiphenyl	91		86		30-120
4-Terphenyl-d14	83		84		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	284		mg/kg	2.80	0.150	1	12/07/22 20:26	12/08/22 11:07	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	33.7		mg/kg	2.22	0.119	1	12/07/22 20:26	12/08/22 10:52	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	206		mg/kg	2.79	0.150	1	12/07/22 20:26	12/08/22 10:57	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	363		mg/kg	2.98	0.160	1	12/07/22 20:26	12/08/22 11:02	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.4		mg/kg	2.24	0.120	1	12/07/22 20:26	12/08/22 11:40	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	162		mg/kg	11.2	0.598	5	12/07/22 20:26	12/12/22 11:39	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1520		mg/kg	2.42	0.130	1	12/07/22 20:26	12/08/22 11:51	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	184		mg/kg	2.44	0.131	1	12/07/22 20:26	12/08/22 11:56	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	412		mg/kg	3.28	0.176	1	12/07/22 20:26	12/08/22 12:01	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	493		mg/kg	3.06	0.164	1	12/07/22 20:26	12/08/22 12:06	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	343		mg/kg	3.21	0.172	1	12/07/22 20:26	12/08/22 12:10	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	411		mg/kg	3.09	0.166	1	12/07/22 20:26	12/08/22 13:49	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	295		mg/kg	2.46	0.132	1	12/07/22 20:26	12/08/22 13:55	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	112		mg/kg	2.64	0.142	1	12/07/22 20:26	12/08/22 13:59	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	63.3		mg/kg	2.62	0.140	1	12/07/22 20:26	12/08/22 13:14	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	125		mg/kg	2.26	0.121	1	12/07/22 20:26	12/08/22 13:19	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	186		mg/kg	2.59	0.139	1	12/07/22 20:26	12/08/22 13:24	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	92.5		mg/kg	2.29	0.123	1	12/07/22 20:26	12/08/22 13:29	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	89.5		mg/kg	2.71	0.145	1	12/07/22 20:26	12/08/22 13:34	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	95.3		mg/kg	2.33	0.125	1	12/07/22 20:26	12/08/22 13:39	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	59.1		mg/kg	2.80	0.150	1	12/08/22 06:10	12/08/22 13:46	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.6		mg/kg	3.38	0.181	1	12/08/22 06:10	12/08/22 14:41	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	30.1		mg/kg	2.16	0.116	1	12/08/22 06:10	12/08/22 14:46	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5090		mg/kg	2.22	0.119	1	12/08/22 06:10	12/08/22 14:50	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268455
Project Number: 200.00135.006
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	69.8		mg/kg	2.72	0.146	1	12/08/22 06:10	12/08/22 14:55	EPA 3050B	1,6010D	DMB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1720509-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/07/22 20:26	12/08/22 10:43	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-25 Batch: WG1720681-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/08/22 06:10	12/08/22 13:24	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1720509-2 SRM Lot Number: D116-540								
Lead, Total	100		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 21-25 Batch: WG1720681-2 SRM Lot Number: D116-540								
Lead, Total	95		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1720509-3 QC Sample: L2268455-01 Client ID: GPR281-01-SS01												
Lead, Total	284	60.8	292	**13**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-25 QC Batch ID: WG1720681-3 QC Sample: L2268455-21 Client ID: GPR284-11-SS01												
Lead, Total	59.1	59.7	118	99		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1720509-4 QC Sample: L2268455-01 Client ID: GPR281-01-SS01						
Lead, Total	284	281	mg/kg	1		20
Total Metals - Mansfield Lab Associated sample(s): 21-25 QC Batch ID: WG1720681-4 QC Sample: L2268455-21 Client ID: GPR284-11-SS01						
Lead, Total	59.1	66.2	mg/kg	11		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-01
Client ID: GPR281-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 09:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.3		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-02
Client ID: GPR281-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 09:45
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-03
Client ID: GPR281-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 09:55
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-04
Client ID: GPR281-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 10:05
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.6		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-05
Client ID: GPR281-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 10:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-06
Client ID: GPR281-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 10:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-07
Client ID: GPR282-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-08
Client ID: GPR282-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:40
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-09
Client ID: GPR282-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:50
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.5		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-10
Client ID: GPR282-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.3		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-11
Client ID: GPR282-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 12:10
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.1		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-12
Client ID: GPR282-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.2		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-13
Client ID: GPR282-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 12:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	12/08/22 07:29	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-14
Client ID: GPR284-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 13:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.9		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-15
Client ID: GPR284-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 13:45
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-16
Client ID: GPR284-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-17
Client ID: GPR284-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:10
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.2		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-18
Client ID: GPR284-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:20
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-19
Client ID: GPR284-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/06/22 14:30
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.5		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-20
Client ID: GPR284-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:35
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-21
Client ID: GPR284-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:40
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-22
Client ID: GPR284-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:50
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.4		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-23
Client ID: GPR284-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 14:55
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.5		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-24
Client ID: GPR284-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 15:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268455
Report Date: 12/13/22

SAMPLE RESULTS

Lab ID: L2268455-25
Client ID: DUP-52
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/06/22 11:00
Date Received: 12/06/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	12/08/22 07:43	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268455

Report Date: 12/13/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-13 QC Batch ID: WG1720705-1 QC Sample: L2268455-01 Client ID: GPR281-01-SS01						
Solids, Total	68.3	64.8	%	5		20
General Chemistry - Westborough Lab Associated sample(s): 14-25 QC Batch ID: WG1720706-1 QC Sample: L2268455-14 Client ID: GPR284-01-SS01						
Solids, Total	74.9	75.0	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-01A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-01B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-01C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-01D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-01F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-02A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-02B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-02C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-02D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-02F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-03A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-03B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-03C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-03D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-03F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-04A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-04B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-04C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-04D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-04F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-05A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-05B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-05C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-05D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-05F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-06A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-06B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-06C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-06D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-06F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-07A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-07B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-07C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-07D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-07F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-08A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-08B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-08C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-08D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-08F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-09A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-09B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-09C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-09D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-09F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-10A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-10B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-10C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-10D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-10F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-11A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-11B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-11C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-11D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-11F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-12A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268455-12B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-12C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-12D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-12F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-13A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-13B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-13C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-13D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-13F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-14A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-14B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-14C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-14D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-14F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-15A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-15B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-15C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-15D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-15F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-16A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268455-16B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-16C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260H(14),PA-8260HLW(14)
L2268455-16D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-16F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-17A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-17B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-17C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-17D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-17F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-18A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-18B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-18C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-18D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-18E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-18F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-19A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-19B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-19C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-19D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-19F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-20A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-20B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-20C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-20D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-20E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-20F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-21A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-21B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-21C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-21D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-21E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-21F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-22A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-22B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-22C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-22D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-22E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-22F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-23A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-23B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268455
Report Date: 12/13/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268455-23C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-23D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-23E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-23F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-24A	Vial MeOH preserved	B	NA		3.5	Y	Absent		PA-8260HLW(14)
L2268455-24B	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-24C	Vial water preserved	B	NA		3.5	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-24D	Plastic 2oz unpreserved for TS	B	NA		3.5	Y	Absent		TS(7)
L2268455-24E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.5	Y	Absent		PB-TI(180)
L2268455-24F	Glass 120ml/4oz unpreserved	B	NA		3.5	Y	Absent		PA-PAH(14)
L2268455-25A	Vial MeOH preserved	A	NA		3.9	Y	Absent		PA-8260HLW(14)
L2268455-25B	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-25C	Vial water preserved	A	NA		3.9	Y	Absent	07-DEC-22 14:30	PA-8260HLW(14)
L2268455-25D	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2268455-25E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2268455-25F	Glass 120ml/4oz unpreserved	A	NA		3.9	Y	Absent		PA-PAH(14)
L2268455-26A	Vial Na2S2O3 preserved	B	NA		3.5	Y	Absent		8011(14)
L2268455-26B	Vial Na2S2O3 preserved	B	NA		3.5	Y	Absent		8011(14)
L2268455-26C	Vial HCl preserved	B	NA		3.5	Y	Absent		PA-8260(14)
L2268455-26D	Vial HCl preserved	B	NA		3.5	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268455
Project Number:	200.00135.006	**Report Date:**	12/13/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL — Work with Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~12169~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -01	GPR291-01-5501	12/06	0930	S	TS	☑	☑	☑		4
-02	GPR281-07-5501		0945			☑	☑	☑		2
-03	GPR281-08-5501		0955			☑	☑	☑		4
-04	GPR281-10-5501		1005			☑	☑	☑		2
-05	GPR281-11-5501		1020			☑	☑	☑		4
-06	GPR281-12-5501		1030			☑	☑	☑		2
-07	GPR282-01-5501		1130			☐	☐	☐		4
-08	GPR282-03-5501		1140			☐	☑	☑		2
-09	GPR282-05-5501		1150			☑	☑	☑		4
-10	GPR 282-07-5501		1200			☐	☐	☐		2
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6/22 1545	D Robinson AAL	12/6/22 1545
D Robinson AAL	12/6/22 1800		12.6.22 1800
	12.6.22 2100		12.6.22 2100

12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(M-NJ)

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@lerraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -11	GPR282-08-5501	12/6	1210	S	TS	☐	☒	☒		4
-12	GPR 282-10-5501		1220			☐	☒	☒		2
-13	GPR 282-12-5501		1230			☐	☒	☒		4
-14	GPR 284-01-5501		1330			☐	☒	☒		2
-15	GPR 284-03-5501		1345			☐	☒	☒		4
-16	GPR 284-05-5501		1400			☐	☒	☒		2
-17	GPR 284-07-5501		1410			☐	☒	☒		4
-18	GPR 284-08-5501		1420			☐	☒	☒		2
-19	GPR 284-09-5501		1430			☐	☒	☒		4
-20	GPR 284-10-5501	↓	1435	↓	↓	☐	☒	☒		2
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6 1505	D Dodgson AAL	12/6/22 1605
D.Dodgson AAL	12/6/22 2200		12/6 2300
			12/6 2321

12/7/22 0135
12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/6/22

ALPHA Job #: L2268455

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~1961~~ ~~7823~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68455 -21	GPR284-11-5501	12/6	1440	S	TS	☑	☑	☑		4
-22	GPR284-13-5501		1450	S	TS	☑	☑	☑		2
-23	GPR284-14-5501		1455	S	TS	☑	☑	☑		4
-24	GPR284-15-5501		1560	S	TS	☑	☑	☑		2
-25	DUP-5Z		-	S	TS	☑	☑	☑		4
-26	TB-221206			W	TS	☑	☐	☐		2
						☐	☐	☐		4
						☐	☐	☐		2
						☐	☐	☐		4
						☐	☐	☐		2

Container Type	G	G	G	-	-	-	-	-	-	-	-	-	
Preservative	F	A	A	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/6/22 1505	D Ransom AAL	12/6/22 1505
D Ransom AAL	12/6/22 1800		12/6 1800
	12.6.22 2105		12.6.22 2105

12/7/22 0135 12/7/22 0135

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

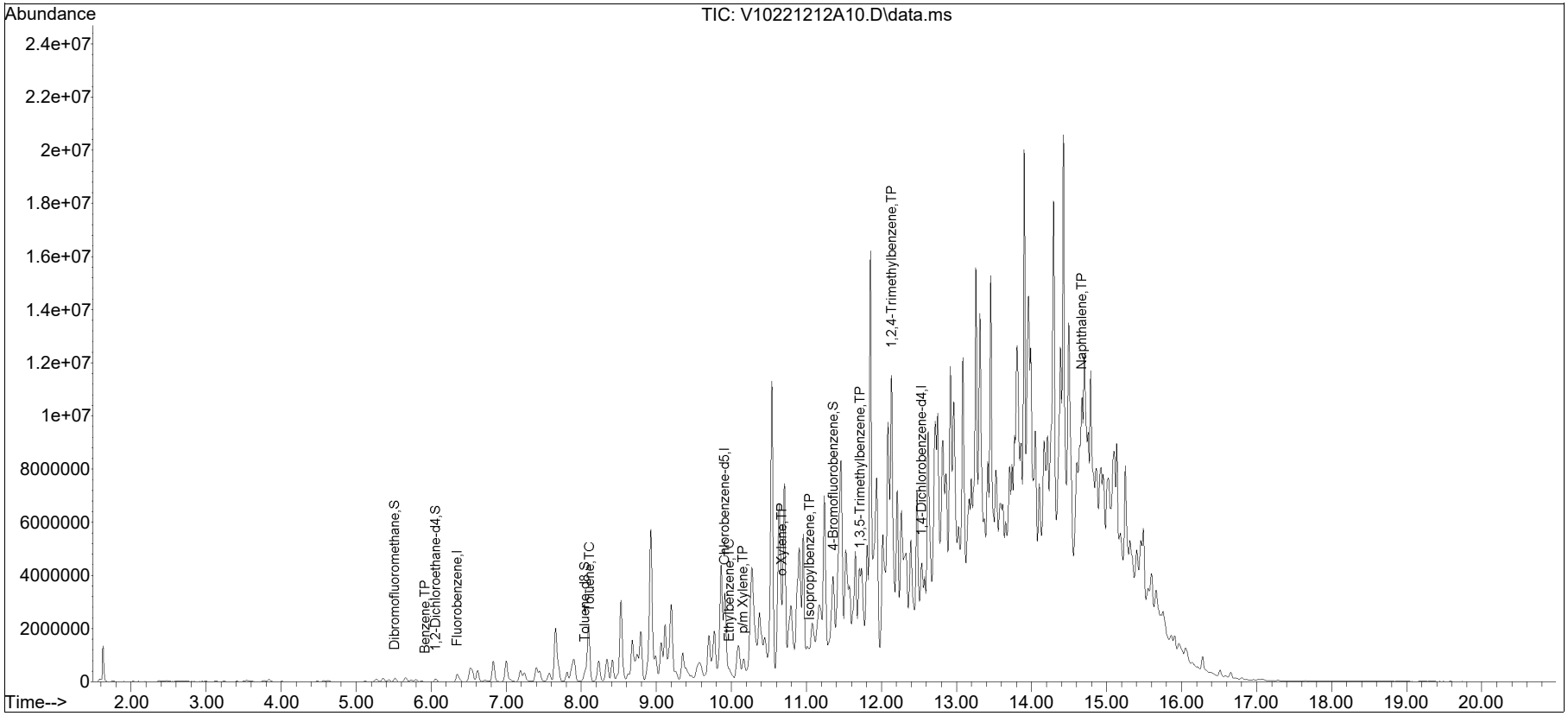
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221212A\
Data File : V10221212A10.D
Acq On : 12 Dec 2022 4:09 pm
Operator : VOA110:NLK
Sample : L2268455-11,31,4.26,5,,C,R2F
Misc : WG1722625,ICAL19281
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 13 08:48:23 2022
Quant Method : I:\VOLATILES\VOA110\2022\221212A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\\V10221212A01.D•

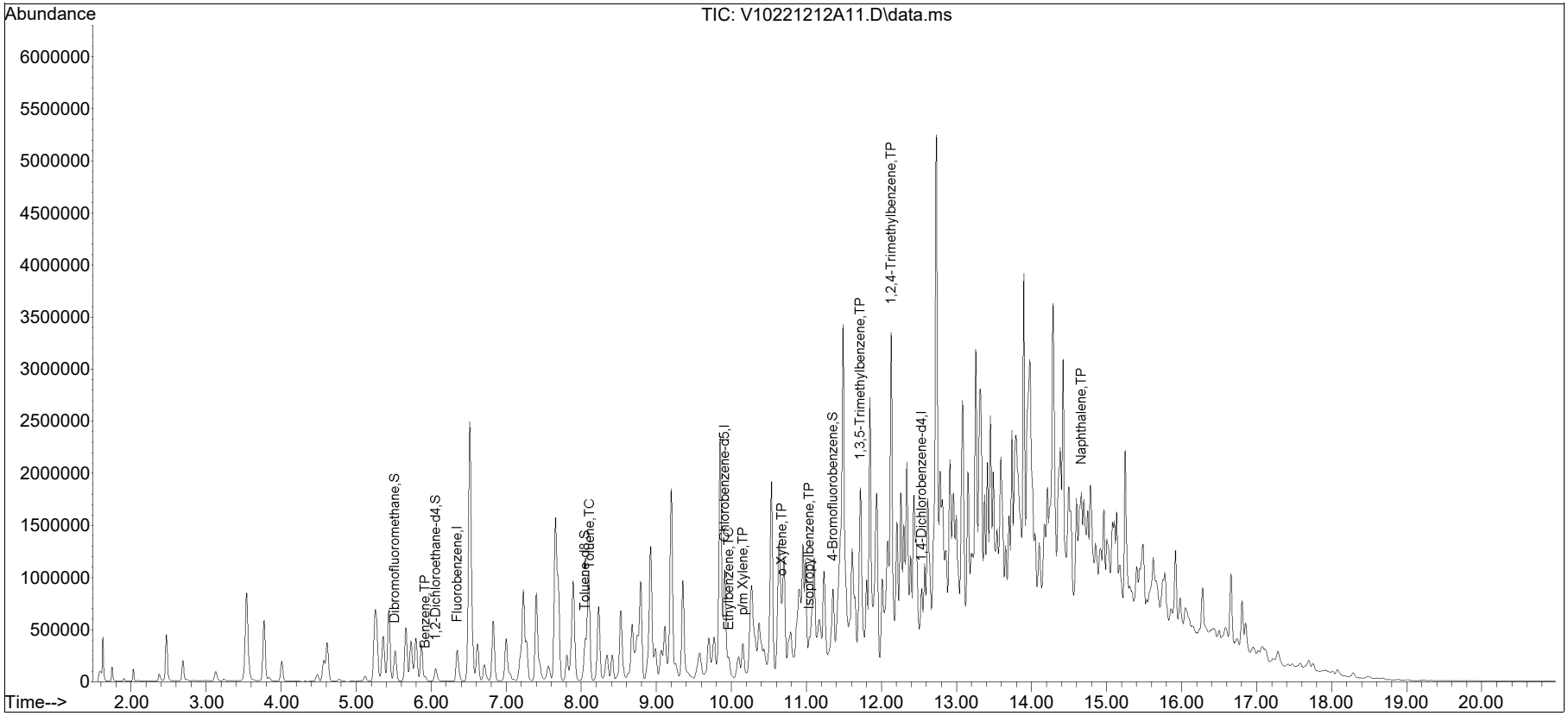


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221212A\
Data File : V10221212A11.D
Acq On : 12 Dec 2022 4:36 pm
Operator : VOA110:NLK
Sample : L2268455-16,31,3.95,5,,C,R2F
Misc : WG1722625,ICAL19281
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 13 08:48:45 2022
Quant Method : I:\VOLATILES\VOA110\2022\221212A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V10221212A01.D•



ANALYTICAL REPORT

Lab Number:	L2268803
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/14/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2268803-01	GPR276-01-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:00	12/07/22
L2268803-02	GPR276-03-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:10	12/07/22
L2268803-03	GPR276-05-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:15	12/07/22
L2268803-04	GPR276-06-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:30	12/07/22
L2268803-05	GPR276-07-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:40	12/07/22
L2268803-06	GPR276-11-SS01	SOIL	PHILADELPHIA, PA	12/07/22 10:50	12/07/22
L2268803-07	GPR276-12-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:00	12/07/22
L2268803-08	GPR276-13-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:15	12/07/22
L2268803-09	GPR276-15-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:30	12/07/22
L2268803-10	GPR276-16-SS01	SOIL	PHILADELPHIA, PA	12/07/22 11:40	12/07/22
L2268803-11	GPR276-17-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:00	12/07/22
L2268803-12	GPR285-01-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:10	12/07/22
L2268803-13	GPR285-02-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:20	12/07/22
L2268803-14	GPR285-03-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:30	12/07/22
L2268803-15	GPR285-07-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:40	12/07/22
L2268803-16	GPR285-08-SS01	SOIL	PHILADELPHIA, PA	12/07/22 13:50	12/07/22
L2268803-17	GPR285-11-SS01	SOIL	PHILADELPHIA, PA	12/07/22 14:00	12/07/22
L2268803-18	GPR285-13-SS01	SOIL	PHILADELPHIA, PA	12/07/22 14:10	12/07/22
L2268803-19	DUP-53	SOIL	PHILADELPHIA, PA	12/07/22 00:00	12/07/22
L2268803-20	FB-221207-1	WATER	PHILADELPHIA, PA	12/07/22 12:00	12/07/22
L2268803-21	FB-221207-2	WATER	PHILADELPHIA, PA	12/07/22 14:10	12/07/22
L2268803-22	TB-221207	WATER	PHILADELPHIA, PA	12/07/22 00:00	12/07/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2268803-01: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2268803-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (139%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-02: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2268803-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (138%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-09 and -11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2268803-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (159%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2268803-10: The surrogate recovery is outside the method acceptance criteria for and dibromofluoromethane (50%) due to interference with the Internal Standard.

L2268803-10: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (138%) and 4-bromofluorobenzene (1010%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

L2268803-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (152%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2268803-12: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (64%) due to interference with the Internal Standard.
L2268803-18D2: The surrogate recovery is outside the acceptance criteria for 1,2-dichloroethane-d4 (133%) due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2268803-18D2: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (60%) due to interference with the Internal Standard.
L2268803-18D2: The internal standard (IS) response for fluorobenzene (221%) was above the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was above method criteria, all associated compounds are considered to have a potentially low bias.

Microextractables
The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2268803-20 through -22, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM
The WG1721171-1 Method Blank, associated with L2268803-20 and -21, has a concentration above the reporting limit for Benzo(a)anthracene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals
L2268803-20: The Field Blank has a result for lead present above the reporting limit. The sample was verified

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Case Narrative (continued)

as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/14/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:54
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.25	0.026	1
Benzene	0.040	J	mg/kg	0.064	0.021	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.033	1
Toluene	0.68		mg/kg	0.13	0.069	1
1,2-Dibromoethane	ND		mg/kg	0.064	0.037	1
Ethylbenzene	0.060	J	mg/kg	0.13	0.018	1
p/m-Xylene	0.11	J	mg/kg	0.25	0.071	1
o-Xylene	0.050	J	mg/kg	0.13	0.037	1
Xylenes, Total	0.16	J	mg/kg	0.13	0.037	1
Isopropylbenzene	0.10	J	mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.028	J	mg/kg	0.25	0.024	1
1,2,4-Trimethylbenzene	0.076	J	mg/kg	0.25	0.042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**139**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 21:53
Analyst: NLK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	0.96		mg/kg	0.056	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	1.4		mg/kg	0.11	0.061	1
1,2-Dibromoethane	ND		mg/kg	0.056	0.033	1
Ethylbenzene	0.51		mg/kg	0.11	0.016	1
p/m-Xylene	1.3		mg/kg	0.23	0.063	1
o-Xylene	0.47		mg/kg	0.11	0.033	1
Xylenes, Total	1.8		mg/kg	0.11	0.033	1
Isopropylbenzene	1.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.30		mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.77		mg/kg	0.23	0.038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 16:45
Analyst: AJK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	0.00040	J	mg/kg	0.00084	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	0.0010	J	mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00084	0.00050	1
Ethylbenzene	0.00026	J	mg/kg	0.0017	0.00024	1
p/m-Xylene	0.0011	J	mg/kg	0.0034	0.00095	1
o-Xylene	0.0016	J	mg/kg	0.0017	0.00049	1
Xylenes, Total	0.0027	J	mg/kg	0.0017	0.00049	1
Isopropylbenzene	0.031		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0021	J	mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.0019	J	mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**138**	Q	70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 10:40
Analyst: NLK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	ND		mg/kg	0.00095	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00049	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00095	0.00056	1
Ethylbenzene	ND		mg/kg	0.0019	0.00027	1
p/m-Xylene	ND		mg/kg	0.0038	0.0011	1
o-Xylene	ND		mg/kg	0.0019	0.00055	1
Xylenes, Total	ND		mg/kg	0.0019	0.00055	1
Isopropylbenzene	ND		mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0038	0.00037	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0038	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:03
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00060	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	0.00027	J	mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0039		mg/kg	0.0022	0.00062	1
o-Xylene	0.0013		mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0052		mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.00047	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.0067		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	0.0033		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	126		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:26
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	ND		mg/kg	0.00046	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00092	0.00024	1
Toluene	ND		mg/kg	0.00092	0.00050	1
1,2-Dibromoethane	ND		mg/kg	0.00046	0.00027	1
Ethylbenzene	ND		mg/kg	0.00092	0.00013	1
p/m-Xylene	ND		mg/kg	0.0018	0.00051	1
o-Xylene	ND		mg/kg	0.00092	0.00027	1
Xylenes, Total	ND		mg/kg	0.00092	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00092	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 11:49
Analyst: NLK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	0.00062	J	mg/kg	0.0016	0.00048	1
Xylenes, Total	0.00062	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.00046	J	mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.00063	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0022	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**182**	Q	70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 22:15
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.28	0.028	1
Benzene	7.9		mg/kg	0.070	0.023	1
1,2-Dichloroethane	ND		mg/kg	0.14	0.036	1
Toluene	4.8		mg/kg	0.14	0.076	1
1,2-Dibromoethane	ND		mg/kg	0.070	0.041	1
Ethylbenzene	4.2		mg/kg	0.14	0.020	1
p/m-Xylene	11.		mg/kg	0.28	0.078	1
o-Xylene	0.72		mg/kg	0.14	0.040	1
Xylenes, Total	12.		mg/kg	0.14	0.040	1
Isopropylbenzene	1.4		mg/kg	0.14	0.015	1
1,3,5-Trimethylbenzene	0.90		mg/kg	0.28	0.027	1
1,2,4-Trimethylbenzene	2.8		mg/kg	0.28	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:35
Analyst: NLK
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00033	1
Benzene	ND		mg/kg	0.00081	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00081	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00091	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 22:38
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	0.083		mg/kg	0.028	0.0092	1
1,2-Dichloroethane	0.037	J	mg/kg	0.056	0.014	1
Toluene	0.27		mg/kg	0.056	0.030	1
1,2-Dibromoethane	ND		mg/kg	0.028	0.016	1
Ethylbenzene	0.087		mg/kg	0.056	0.0078	1
p/m-Xylene	0.36		mg/kg	0.11	0.031	1
o-Xylene	0.041	J	mg/kg	0.056	0.016	1
Xylenes, Total	0.40	J	mg/kg	0.056	0.016	1
Isopropylbenzene	0.26		mg/kg	0.056	0.0061	1
1,3,5-Trimethylbenzene	0.051	J	mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	0.066	J	mg/kg	0.11	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 23:24
Analyst: NLK
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.014		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	0.013		mg/kg	0.0018	0.00098	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	0.033		mg/kg	0.0036	0.0010	1
o-Xylene	0.011		mg/kg	0.0018	0.00052	1
Xylenes, Total	0.044		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.26		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.013		mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	0.024		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	**138**	Q	70-130
4-Bromofluorobenzene	**1010**	Q	70-130
Dibromofluoromethane	**50**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 23:01
Analyst: NLK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.24	0.024	1
Benzene	0.17		mg/kg	0.059	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.030	1
Toluene	1.0		mg/kg	0.12	0.064	1
1,2-Dibromoethane	ND		mg/kg	0.059	0.035	1
Ethylbenzene	0.32		mg/kg	0.12	0.017	1
p/m-Xylene	1.2		mg/kg	0.24	0.066	1
o-Xylene	0.37		mg/kg	0.12	0.034	1
Xylenes, Total	1.6		mg/kg	0.12	0.034	1
Isopropylbenzene	1.4		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.31		mg/kg	0.24	0.023	1
1,2,4-Trimethylbenzene	0.99		mg/kg	0.24	0.040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**152**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 03:15
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	4.0		mg/kg	0.054	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	12.		mg/kg	0.11	0.059	1
1,2-Dibromoethane	ND		mg/kg	0.054	0.032	1
Ethylbenzene	7.4		mg/kg	0.11	0.015	1
p/m-Xylene	21.		mg/kg	0.22	0.061	1
o-Xylene	6.4		mg/kg	0.11	0.032	1
Xylenes, Total	27.		mg/kg	0.11	0.032	1
Isopropylbenzene	4.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	30.		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	28.		mg/kg	0.22	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	**64**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:30
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	0.00026	J	mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00084	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	0.00036	J	mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0016	0.00045	1
Xylenes, Total	ND		mg/kg	0.0016	0.00045	1
Isopropylbenzene	0.00021	J	mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00077	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.00063	J	mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:52
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00068	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0012	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00070	1
o-Xylene	ND		mg/kg	0.0012	0.00036	1
Xylenes, Total	ND		mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D2
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 17:13
Analyst: AJK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.88	0.089	5
Benzene	12.		mg/kg	0.22	0.073	5
1,2-Dichloroethane	ND		mg/kg	0.44	0.11	5
Toluene	17.		mg/kg	0.44	0.24	5
1,2-Dibromoethane	ND		mg/kg	0.22	0.13	5
Ethylbenzene	51.		mg/kg	0.44	0.062	5
p/m-Xylene	88.		mg/kg	0.88	0.25	5
o-Xylene	6.5		mg/kg	0.44	0.13	5
Xylenes, Total	94.		mg/kg	0.44	0.13	5
Isopropylbenzene	18.		mg/kg	0.44	0.048	5
1,3,5-Trimethylbenzene	120		mg/kg	0.88	0.085	5
1,2,4-Trimethylbenzene	240	E	mg/kg	0.88	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	71		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:15
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	210		mg/kg	3.5	0.59	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	78		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:38
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:01
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00089	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D2
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 17:40
Analyst: AJK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.42	0.043	2
Benzene	1.1		mg/kg	0.11	0.035	2
1,2-Dichloroethane	ND		mg/kg	0.21	0.054	2
Toluene	6.9		mg/kg	0.21	0.12	2
1,2-Dibromoethane	ND		mg/kg	0.11	0.062	2
Ethylbenzene	23.		mg/kg	0.21	0.030	2
p/m-Xylene	34.		mg/kg	0.42	0.12	2
o-Xylene	5.0		mg/kg	0.21	0.062	2
Xylenes, Total	39.		mg/kg	0.21	0.062	2
Isopropylbenzene	12.		mg/kg	0.21	0.023	2
1,3,5-Trimethylbenzene	89.	E	mg/kg	0.42	0.041	2
1,2,4-Trimethylbenzene	94.	E	mg/kg	0.42	0.071	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**133**	Q	70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	**60**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:24
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3,5-Trimethylbenzene	80.		mg/kg	4.2	0.41	20
1,2,4-Trimethylbenzene	80.		mg/kg	4.2	0.71	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:47
Analyst: JIC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00086	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00097	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:26
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:30
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:37
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-22
Client ID: TB-221207
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:48
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-22
Client ID: TB-221207
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/22 10:10
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 20-22 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:21
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,07,09,11 Batch: WG1722648-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:21
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 10 Batch: WG1722651-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:31
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03-06,08,13-14,16-17,19 Batch: WG1722682-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 09:31
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01,15,18 Batch: WG1722683-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/22 09:10
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 20-22 Batch: WG1722693-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02 Batch: WG1722945-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 15,18 Batch: WG1722950-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 18:48
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12 Batch: WG1723094-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 20-22		Batch: WG1721462-2						
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,07,09,11 Batch: WG1722648-3 WG1722648-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	89		88		70-130	1		30
1,2-Dichloroethane	88		87		70-130	1		30
Toluene	90		88		70-130	2		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		85		70-130	6		30
o-Xylene	88		83		70-130	6		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		91		70-130	5		30
1,2,4-Trimethylbenzene	93		89		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	108		108		70-130
4-Bromofluorobenzene	109		110		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 10 Batch: WG1722651-3 WG1722651-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	89		88		70-130	1		30
1,2-Dichloroethane	88		87		70-130	1		30
Toluene	90		88		70-130	2		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		85		70-130	6		30
o-Xylene	88		83		70-130	6		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		91		70-130	5		30
1,2,4-Trimethylbenzene	93		89		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	108		108		70-130
4-Bromofluorobenzene	109		110		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03-06,08,13-14,16-17,19 Batch: WG1722682-3 WG1722682-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	86		86		70-130	0		30
1,2-Dichloroethane	87		88		70-130	1		30
Toluene	92		88		70-130	4		30
1,2-Dibromoethane	89		87		70-130	2		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	87		86		70-130	1		30
Isopropylbenzene	98		90		70-130	9		30
1,3,5-Trimethylbenzene	98		92		70-130	6		30
1,2,4-Trimethylbenzene	96		89		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		102		70-130
Toluene-d8	111		107		70-130
4-Bromofluorobenzene	113		110		70-130
Dibromofluoromethane	98		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01,15,18 Batch: WG1722683-3 WG1722683-4								
Methyl tert butyl ether	91		92		66-130	1		30
Benzene	86		86		70-130	0		30
1,2-Dichloroethane	87		88		70-130	1		30
Toluene	92		88		70-130	4		30
1,2-Dibromoethane	89		87		70-130	2		30
Ethylbenzene	91		88		70-130	3		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	87		86		70-130	1		30
Isopropylbenzene	98		90		70-130	9		30
1,3,5-Trimethylbenzene	98		92		70-130	6		30
1,2,4-Trimethylbenzene	96		89		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		102		70-130
Toluene-d8	111		107		70-130
4-Bromofluorobenzene	112		110		70-130
Dibromofluoromethane	98		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 20-22 Batch: WG1722693-3 WG1722693-4								
Methyl tert butyl ether	95		95		63-130	0		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		103		70-130
Toluene-d8	104		106		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	101		101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02 Batch: WG1722945-3 WG1722945-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 15,18 Batch: WG1722950-3 WG1722950-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	93		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12 Batch: WG1723094-3 WG1723094-4								
Methyl tert butyl ether	99		100		66-130	1		30
Benzene	97		100		70-130	3		30
1,2-Dichloroethane	98		99		70-130	1		30
Toluene	89		92		70-130	3		30
1,2-Dibromoethane	93		95		70-130	2		30
Ethylbenzene	92		94		70-130	2		30
p/m-Xylene	91		93		70-130	2		30
o-Xylene	92		95		70-130	3		30
Isopropylbenzene	89		91		70-130	2		30
1,3,5-Trimethylbenzene	89		90		70-130	1		30
1,2,4-Trimethylbenzene	87		90		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	99		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:10
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	12.	E	mg/kg	0.28	0.033	1
Fluorene	3.0		mg/kg	0.28	0.027	1
Phenanthrene	5.5		mg/kg	0.16	0.033	1
Anthracene	2.8		mg/kg	0.16	0.054	1
Pyrene	7.0		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.3		mg/kg	0.16	0.031	1
Chrysene	3.5		mg/kg	0.16	0.029	1
Benzo(a)pyrene	2.6		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.3		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01 D
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:51
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.4	0.17	5
Benzo(b)fluoranthene	2.7		mg/kg	0.82	0.23	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:15
Analyst: CMM
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.23	0.028	1
Fluorene	0.20	J	mg/kg	0.23	0.022	1
Phenanthrene	0.72		mg/kg	0.14	0.028	1
Anthracene	0.28		mg/kg	0.14	0.044	1
Pyrene	1.1		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.68		mg/kg	0.14	0.026	1
Chrysene	0.64		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.038	1
Benzo(a)pyrene	0.88		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	0.68		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:49
Analyst: CMM
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.	E	mg/kg	0.24	0.030	1
Fluorene	0.93		mg/kg	0.24	0.024	1
Phenanthrene	3.9		mg/kg	0.15	0.030	1
Anthracene	1.1		mg/kg	0.15	0.048	1
Pyrene	2.5		mg/kg	0.15	0.024	1
Benzo(a)anthracene	1.5		mg/kg	0.15	0.027	1
Chrysene	1.5		mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	1.8		mg/kg	0.15	0.041	1
Benzo(a)pyrene	1.7		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	0.99		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03 D
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:27
Analyst: CMM
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	16.		mg/kg	1.2	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 00:32
Analyst: CMM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.19	0.023	1
Fluorene	0.20		mg/kg	0.19	0.018	1
Phenanthrene	0.96		mg/kg	0.11	0.023	1
Anthracene	0.27		mg/kg	0.11	0.037	1
Pyrene	0.76		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.49		mg/kg	0.11	0.021	1
Chrysene	0.44		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.57		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.51		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.28		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 01:05
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.38		mg/kg	0.18	0.022	1
Fluorene	0.71		mg/kg	0.18	0.018	1
Phenanthrene	4.6		mg/kg	0.11	0.022	1
Anthracene	1.4		mg/kg	0.11	0.035	1
Pyrene	3.6		mg/kg	0.11	0.018	1
Benzo(a)anthracene	2.2		mg/kg	0.11	0.020	1
Chrysene	1.9		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	2.2		mg/kg	0.11	0.030	1
Benzo(a)pyrene	1.9		mg/kg	0.14	0.044	1
Benzo(ghi)perylene	0.86		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:18
Analyst: CMM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.9		mg/kg	0.26	0.031	1
Fluorene	0.49		mg/kg	0.26	0.025	1
Phenanthrene	2.7		mg/kg	0.15	0.031	1
Anthracene	0.85		mg/kg	0.15	0.050	1
Pyrene	2.6		mg/kg	0.15	0.025	1
Benzo(a)anthracene	1.8		mg/kg	0.15	0.029	1
Chrysene	1.7		mg/kg	0.15	0.027	1
Benzo(b)fluoranthene	2.4		mg/kg	0.15	0.043	1
Benzo(a)pyrene	2.2		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	1.5		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:36
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.2		mg/kg	0.21	0.026	1
Fluorene	0.40		mg/kg	0.21	0.021	1
Phenanthrene	3.0		mg/kg	0.13	0.026	1
Anthracene	1.4		mg/kg	0.13	0.042	1
Pyrene	8.0		mg/kg	0.13	0.021	1
Benzo(a)anthracene	9.8	E	mg/kg	0.13	0.024	1
Chrysene	7.2		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	13.	E	mg/kg	0.13	0.036	1
Benzo(a)pyrene	12.	E	mg/kg	0.17	0.052	1
Benzo(ghi)perylene	5.4		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07 D
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:03
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)anthracene	8.5		mg/kg	0.64	0.12	5
Benzo(b)fluoranthene	10.		mg/kg	0.64	0.18	5
Benzo(a)pyrene	9.2		mg/kg	0.86	0.26	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 05:53
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	17.	E	mg/kg	0.25	0.030	1
Fluorene	0.79		mg/kg	0.25	0.024	1
Phenanthrene	4.0		mg/kg	0.15	0.030	1
Anthracene	1.4		mg/kg	0.15	0.049	1
Pyrene	3.9		mg/kg	0.15	0.025	1
Benzo(a)anthracene	2.9		mg/kg	0.15	0.028	1
Chrysene	3.0		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	4.4		mg/kg	0.15	0.042	1
Benzo(a)pyrene	4.0		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	2.6		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08 D
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 14:39
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.2	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/09/22 23:58
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.8		mg/kg	0.18	0.022	1
Fluorene	0.13	J	mg/kg	0.18	0.018	1
Phenanthrene	0.73		mg/kg	0.11	0.022	1
Anthracene	0.17		mg/kg	0.11	0.036	1
Pyrene	0.64		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.35		mg/kg	0.11	0.021	1
Chrysene	0.37		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.47		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.38		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.22		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10 D2
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 22:11
Analyst: LJG
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	150		mg/kg	2.9	0.59	20
Pyrene	160		mg/kg	2.9	0.48	20
Benzo(a)anthracene	55.		mg/kg	2.9	0.54	20
Chrysene	60.		mg/kg	2.9	0.50	20
Benzo(b)fluoranthene	56.		mg/kg	2.9	0.81	20
Benzo(a)pyrene	59.		mg/kg	3.9	1.2	20
Benzo(ghi)perylene	45.		mg/kg	3.9	0.57	20

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10 D
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 14:15
Analyst: CMM
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.4		mg/kg	0.48	0.059	2
Fluorene	18.		mg/kg	0.48	0.047	2
Phenanthrene	70.	E	mg/kg	0.29	0.059	2
Anthracene	16.		mg/kg	0.29	0.094	2
Pyrene	77.	E	mg/kg	0.29	0.048	2
Benzo(a)anthracene	30.	E	mg/kg	0.29	0.054	2
Chrysene	28.	E	mg/kg	0.29	0.050	2
Benzo(b)fluoranthene	26.	E	mg/kg	0.29	0.081	2
Benzo(a)pyrene	27.	E	mg/kg	0.39	0.12	2
Benzo(ghi)perylene	21.	E	mg/kg	0.39	0.057	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:27
Analyst: CMM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	8.0		mg/kg	0.26	0.031	1
Fluorene	0.68		mg/kg	0.26	0.025	1
Phenanthrene	2.6		mg/kg	0.16	0.031	1
Anthracene	0.96		mg/kg	0.16	0.050	1
Pyrene	1.7		mg/kg	0.16	0.026	1
Benzo(a)anthracene	1.1		mg/kg	0.16	0.029	1
Chrysene	1.2		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	1.9		mg/kg	0.16	0.044	1
Benzo(a)pyrene	1.8		mg/kg	0.21	0.063	1
Benzo(ghi)perylene	1.4		mg/kg	0.21	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 06:43
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	11.	E	mg/kg	0.23	0.028	1
Fluorene	0.68		mg/kg	0.23	0.022	1
Phenanthrene	2.1		mg/kg	0.14	0.028	1
Anthracene	0.71		mg/kg	0.14	0.045	1
Pyrene	1.6		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.4		mg/kg	0.14	0.026	1
Chrysene	1.4		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.5		mg/kg	0.14	0.039	1
Benzo(a)pyrene	2.3		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.7		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12 D
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 13:27
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	11.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:00
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.1		mg/kg	0.24	0.029	1
Fluorene	0.30		mg/kg	0.24	0.023	1
Phenanthrene	1.7		mg/kg	0.14	0.029	1
Anthracene	0.70		mg/kg	0.14	0.047	1
Pyrene	2.0		mg/kg	0.14	0.024	1
Benzo(a)anthracene	2.2		mg/kg	0.14	0.027	1
Chrysene	2.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.5		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.2		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.8		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	45		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:17
Analyst: CMM
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.1		mg/kg	0.23	0.028	1
Fluorene	0.26		mg/kg	0.23	0.022	1
Phenanthrene	1.6		mg/kg	0.14	0.028	1
Anthracene	0.68		mg/kg	0.14	0.044	1
Pyrene	1.6		mg/kg	0.14	0.022	1
Benzo(a)anthracene	1.2		mg/kg	0.14	0.026	1
Chrysene	1.3		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.0		mg/kg	0.14	0.038	1
Benzo(a)pyrene	1.8		mg/kg	0.18	0.055	1
Benzo(ghi)perylene	1.4		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	93		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:34
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	16.	E	mg/kg	0.24	0.029	1
Fluorene	0.81		mg/kg	0.24	0.023	1
Phenanthrene	2.7		mg/kg	0.14	0.029	1
Anthracene	0.59		mg/kg	0.14	0.046	1
Pyrene	0.83		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.41		mg/kg	0.14	0.027	1
Chrysene	0.47		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.59		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.40		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.33		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	92		30-120
4-Terphenyl-d14	87		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15 D
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 13:03
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 07:51
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.0		mg/kg	0.23	0.028	1
Fluorene	0.38		mg/kg	0.23	0.022	1
Phenanthrene	1.5		mg/kg	0.14	0.028	1
Anthracene	0.50		mg/kg	0.14	0.045	1
Pyrene	1.2		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.2		mg/kg	0.14	0.026	1
Chrysene	1.2		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.8		mg/kg	0.14	0.039	1
Benzo(a)pyrene	1.8		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.0		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	83		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:08
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.6		mg/kg	0.24	0.029	1
Fluorene	0.40		mg/kg	0.24	0.023	1
Phenanthrene	2.5		mg/kg	0.14	0.029	1
Anthracene	0.77		mg/kg	0.14	0.047	1
Pyrene	2.0		mg/kg	0.14	0.024	1
Benzo(a)anthracene	1.6		mg/kg	0.14	0.027	1
Chrysene	1.4		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	2.0		mg/kg	0.14	0.040	1
Benzo(a)pyrene	1.9		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.2		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:24
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.	E	mg/kg	0.23	0.028	1
Fluorene	1.1		mg/kg	0.23	0.023	1
Phenanthrene	7.3		mg/kg	0.14	0.028	1
Anthracene	2.0		mg/kg	0.14	0.046	1
Pyrene	6.8		mg/kg	0.14	0.023	1
Benzo(a)anthracene	4.9		mg/kg	0.14	0.026	1
Chrysene	4.4		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	5.8		mg/kg	0.14	0.039	1
Benzo(a)pyrene	4.9		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	4.5		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	95		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18 D
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 12:38
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/10/22 08:41
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.9		mg/kg	0.24	0.029	1
Fluorene	0.41		mg/kg	0.24	0.023	1
Phenanthrene	2.0		mg/kg	0.14	0.029	1
Anthracene	0.80		mg/kg	0.14	0.046	1
Pyrene	1.4		mg/kg	0.14	0.024	1
Benzo(a)anthracene	1.9		mg/kg	0.14	0.027	1
Chrysene	1.8		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	3.0		mg/kg	0.14	0.040	1
Benzo(a)pyrene	2.7		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	1.6		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	44		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 16:01
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	94		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 16:17
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	87		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/09/22 21:48
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/08/22 23:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-19 Batch: WG1721167-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/22 14:57
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/09/22 00:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 20-21 Batch: WG1721171-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.35		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	71		15-120
4-Terphenyl-d14	93		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-19 Batch: WG1721167-2 WG1721167-3								
Naphthalene	63		70		40-140	11		50
Fluorene	62		70		40-140	12		50
Phenanthrene	59		66		40-140	11		50
Anthracene	60		68		40-140	13		50
Pyrene	62		72		35-142	15		50
Benzo(a)anthracene	62		70		40-140	12		50
Chrysene	60		68		40-140	13		50
Benzo(b)fluoranthene	64		72		40-140	12		50
Benzo(a)pyrene	66		75		40-140	13		50
Benzo(ghi)perylene	60		69		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	85		98		23-120
2-Fluorobiphenyl	66		72		30-120
4-Terphenyl-d14	61		68		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 20-21 Batch: WG1721171-2 WG1721171-3								
Naphthalene	59		65		40-140	10		40
Fluorene	68		71		40-140	4		40
Phenanthrene	70		71		40-140	1		40
Anthracene	75		78		40-140	4		40
Pyrene	80		79		26-127	1		40
Benzo(a)anthracene	83		82		40-140	1		40
Chrysene	74		75		40-140	1		40
Benzo(b)fluoranthene	83		84		40-140	1		40
Benzo(a)pyrene	87		85		40-140	2		40
Benzo(ghi)perylene	83		85		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	81		91		23-120
2-Fluorobiphenyl	63		70		15-120
4-Terphenyl-d14	86		85		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	475		mg/kg	3.17	0.170	1	12/09/22 09:50	12/09/22 22:51	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	84.6		mg/kg	2.73	0.146	1	12/09/22 09:50	12/09/22 22:55	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	198		mg/kg	2.83	0.152	1	12/09/22 09:50	12/09/22 23:00	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	82.9		mg/kg	2.26	0.121	1	12/09/22 09:50	12/10/22 10:11	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	896		mg/kg	2.17	0.116	1	12/09/22 09:50	12/10/22 10:14	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	397		mg/kg	3.03	0.162	1	12/09/22 09:50	12/10/22 10:18	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	131		mg/kg	2.58	0.138	1	12/09/22 09:50	12/10/22 10:21	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	167		mg/kg	2.84	0.152	1	12/09/22 09:50	12/10/22 10:25	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7.08		mg/kg	2.13	0.114	1	12/09/22 09:50	12/10/22 10:28	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	284		mg/kg	2.91	0.156	1	12/09/22 09:50	12/10/22 10:31	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	383		mg/kg	2.95	0.158	1	12/09/22 09:50	12/10/22 10:35	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	255		mg/kg	2.76	0.148	1	12/09/22 09:50	12/10/22 10:38	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	80.6		mg/kg	2.82	0.151	1	12/09/22 09:50	12/10/22 10:42	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	296		mg/kg	2.67	0.143	1	12/09/22 09:50	12/10/22 10:59	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	287		mg/kg	2.80	0.150	1	12/09/22 09:50	12/10/22 11:03	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	160		mg/kg	2.76	0.148	1	12/09/22 09:50	12/10/22 11:06	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	113		mg/kg	2.84	0.152	1	12/09/22 09:50	12/10/22 11:09	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	129		mg/kg	2.78	0.149	1	12/09/22 09:50	12/10/22 11:13	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	212		mg/kg	2.83	0.152	1	12/09/22 09:50	12/10/22 11:16	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-20
Client ID: FB-221207-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 12:00
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	18.21		ug/l	1.000	0.3430	1	12/09/22 09:35	12/13/22 22:52	EPA 3005A	1,6020B	WKP

Project Name: PHILADELPHIA REFINERY
Lab Number: L2268803
Project Number: 200.00135.006
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-21
Client ID: FB-221207-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	0.9214	J	ug/l	1.000	0.3430	1	12/09/22 09:35	12/13/22 22:57	EPA 3005A	1,6020B	WKP

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2268803

Project Number: 200.00135.006 **Report Date:** 12/14/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-19 Batch: WG1721218-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/09/22 09:50	12/09/22 22:42	1,6010D	MRC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 20-21 Batch: WG1721257-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/09/22 09:35	12/09/22 13:17	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-19 Batch: WG1721218-2 SRM Lot Number: D116-540								
Lead, Total	101		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 20-21 Batch: WG1721257-2								
Lead, Total	104		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG1721218-3 QC Sample: L2268385-06 Client ID: MS Sample												
Lead, Total	4.57	82.8	80.3	91		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 20-21 QC Batch ID: WG1721257-3 QC Sample: L2268797-01 Client ID: MS Sample												
Lead, Total	0.5591J	530	500.1	94		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-01
Client ID: GPR276-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.2		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-02
Client ID: GPR276-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-03
Client ID: GPR276-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:15
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-04
Client ID: GPR276-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-05
Client ID: GPR276-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-06
Client ID: GPR276-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 10:50
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.8		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-07
Client ID: GPR276-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.3		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-08
Client ID: GPR276-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:15
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-09
Client ID: GPR276-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.2		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-10
Client ID: GPR276-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 11:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-11
Client ID: GPR276-17-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/07/22 13:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.1		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-12
Client ID: GPR285-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.3		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-13
Client ID: GPR285-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:20
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.6		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-14
Client ID: GPR285-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:30
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.0		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-15
Client ID: GPR285-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:40
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.7		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-16
Client ID: GPR285-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 13:50
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.7		%	0.100	NA	1	-	12/09/22 13:09	121,2540G	GG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-17
Client ID: GPR285-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 14:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.5		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-18
Client ID: GPR285-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 14:10
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2268803
Report Date: 12/14/22

SAMPLE RESULTS

Lab ID: L2268803-19
Client ID: DUP-53
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/07/22 00:00
Date Received: 12/07/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/09/22 17:38	121,2540G	MF

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2268803

Report Date: 12/14/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-16 QC Batch ID: WG1721482-1 QC Sample: L2268803-01 Client ID: GPR276-01-SS01						
Solids, Total	60.2	58.9	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 17-19 QC Batch ID: WG1721555-1 QC Sample: L2268350-01 Client ID: DUP Sample						
Solids, Total	86.7	84.7	%	2		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-01A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-01B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-01C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-01D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-01E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-01F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-02A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2268803-02B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260H(14),PA-8260HLW(14)
L2268803-02C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260H(14),PA-8260HLW(14)
L2268803-02D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-02E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-02F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-03A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-03B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-03C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-03D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-03E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-03F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-04A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-04B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-04C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-04D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-04E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-04F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-05A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-05B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-05C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-05D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-05F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-06A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-06B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-06C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-06D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-06E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-06F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-07A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)
L2268803-07B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-07C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-07D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-07E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-07F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-08A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-08B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-08C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-08D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-08F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-09A	Vial MeOH preserved	C	NA		3.2	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-09B	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-09C	Vial water preserved	C	NA		3.2	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-09D	Plastic 2oz unpreserved for TS	C	NA		3.2	Y	Absent		TS(7)
L2268803-09E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.2	Y	Absent		PB-TI(180)
L2268803-09F	Glass 120ml/4oz unpreserved	C	NA		3.2	Y	Absent		PA-PAH(14)
L2268803-10A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-10B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-10C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-10D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-10F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-11A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-11B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-11C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-11D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-11F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-12A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-12B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-12C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-12D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-12F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-13A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-13B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-13C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-13D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-13F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-14A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-14B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-14C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-14D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-14F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-15A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-15B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-15C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-15D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-15F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-16A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-16B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-16C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-16D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-16F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-17A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-17B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-17C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-17D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-17F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-18A	Vial MeOH preserved	B	NA		3.7	Y	Absent		PA-8260HLW(14)
L2268803-18B	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-18C	Vial water preserved	B	NA		3.7	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-18D	Plastic 2oz unpreserved for TS	B	NA		3.7	Y	Absent		TS(7)
L2268803-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.7	Y	Absent		PB-TI(180)
L2268803-18F	Glass 120ml/4oz unpreserved	B	NA		3.7	Y	Absent		PA-PAH(14)
L2268803-19A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2268803-19B	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-19C	Vial water preserved	A	NA		3.3	Y	Absent	08-DEC-22 14:21	PA-8260HLW(14)
L2268803-19D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2268803-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2268803-19F	Glass 120ml/4oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2268803-20A	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20B	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20C	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-20D	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-20E	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-20F	Plastic 250ml HNO3 preserved	B	<2	<2	3.7	Y	Absent		PB-6020T-PPB(180)
L2268803-20G	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-20H	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-20I	Plastic 120ml unpreserved	B	7	7	3.7	Y	Absent		ARCHIVE()
L2268803-21A	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21B	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21C	Vial HCl preserved	B	NA		3.7	Y	Absent		PA-8260(14)
L2268803-21D	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-21E	Vial Na2S2O3 preserved	B	NA		3.7	Y	Absent		8011(14)
L2268803-21F	Plastic 250ml HNO3 preserved	B	<2	<2	3.7	Y	Absent		PB-6020T-PPB(180)
L2268803-21G	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-21H	Amber 250ml unpreserved	B	7	7	3.7	Y	Absent		PA-PAHSIM-LVI(7)
L2268803-21I	Plastic 120ml unpreserved	B	7	7	3.7	Y	Absent		ARCHIVE()
L2268803-22A	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2268803
Report Date: 12/14/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2268803-22B	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)
L2268803-22C	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)
L2268803-22D	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2268803
Project Number:	200.00135.006	**Report Date:**	12/14/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 12/8/22

ALPHA Job #: L2264403

ALPHA ANALYTICAL — Advancing Science

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~1761~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program: Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68803.01	GPR276-01-5501	12/7	1000	S	TS	☑	☑	☑		4
.02	GPR276-03-5501		1010			☑	☑	☑		
.03	GPR276-05-5501		1015			☑	☑	☑		
.04	GPR276-06-5501		1030			☑	☑	☑		
.05	GPR276-07-5501		1040			☑	☑	☑		
.06	GPR276-11-5501		1050			☑	☑	☑		
.07	GPR276-12-5501		1100			☑	☑	☑		
.08	GPR276-13-5501		1115			☑	☑	☑		
.09	GPR276-15-5501		1130			☑	☑	☑		
.10	GPR276-16-5501	↓	1140	↓	↓	☑	☑	☑		
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/7		
	12/7/22 8:07		12/7/22 1555
	12/7/22 1000		12-7-22 2200

12/8/22 0150

12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL

Date Rec'd in Lab: 12/8/22

ALPHA Job #: L2268803

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: ~~13161~~ ~~17873~~ 18559

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
68803.11	GPR276-17-SS01	12/7	1300	S	TS	☑	☑	☑		6
.12	GPR285-01-SS01	↓	1310	↓	↓	☑	☑	☑		6
.13	GPR285-02-SS01		1320			☑	☑	☑		6
.14	GPR285-03-SS01		1330			☑	☑	☑		6
.15	GPR285-07-SS01		1340			☑	☑	☑		6
.16	GPR285-08-SS01		1350			☑	☑	☑		6
.17	GPR285-11-SS01		1400			☑	☑	☑		6
.18	GPR285-13-SS01		1410			☑	☑	☑		6
.19	DUP-53		-			☑	☑	☑		6

	VOCs	SVOCs	Lead
Container Type	G	G	G
Preservative	F	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	12/7	[signature] AAL	12/7/22 1555
[signature] AAL	12/7/22/ 18:00	[signature]	12-7 18:00
[signature] AAL	12-7 2100	[signature]	12-7-22 2100

[signature] 12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/8/22

ALPHA Job #: L2264803

ALPHA ANALYTICAL — Serving Clients Globally

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments
L2264803 -20	FB-221207-1	12/7	1200	W	TS	☑	☑	☑	
-21	FB-221207-2	↓	1410	W	↓	☑	☑	☑	
	TB-221207	↓	-	W	↓	☑	☑	☑	

Container Type	G	G	G	-	-	-	-	-	-	-	-	-
Preservative	F	A	A	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	12/7		12/7/22 1553
	12/7/22		12/7/22
	12/8/22 0150		12/8/22 0150

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

L2268803

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

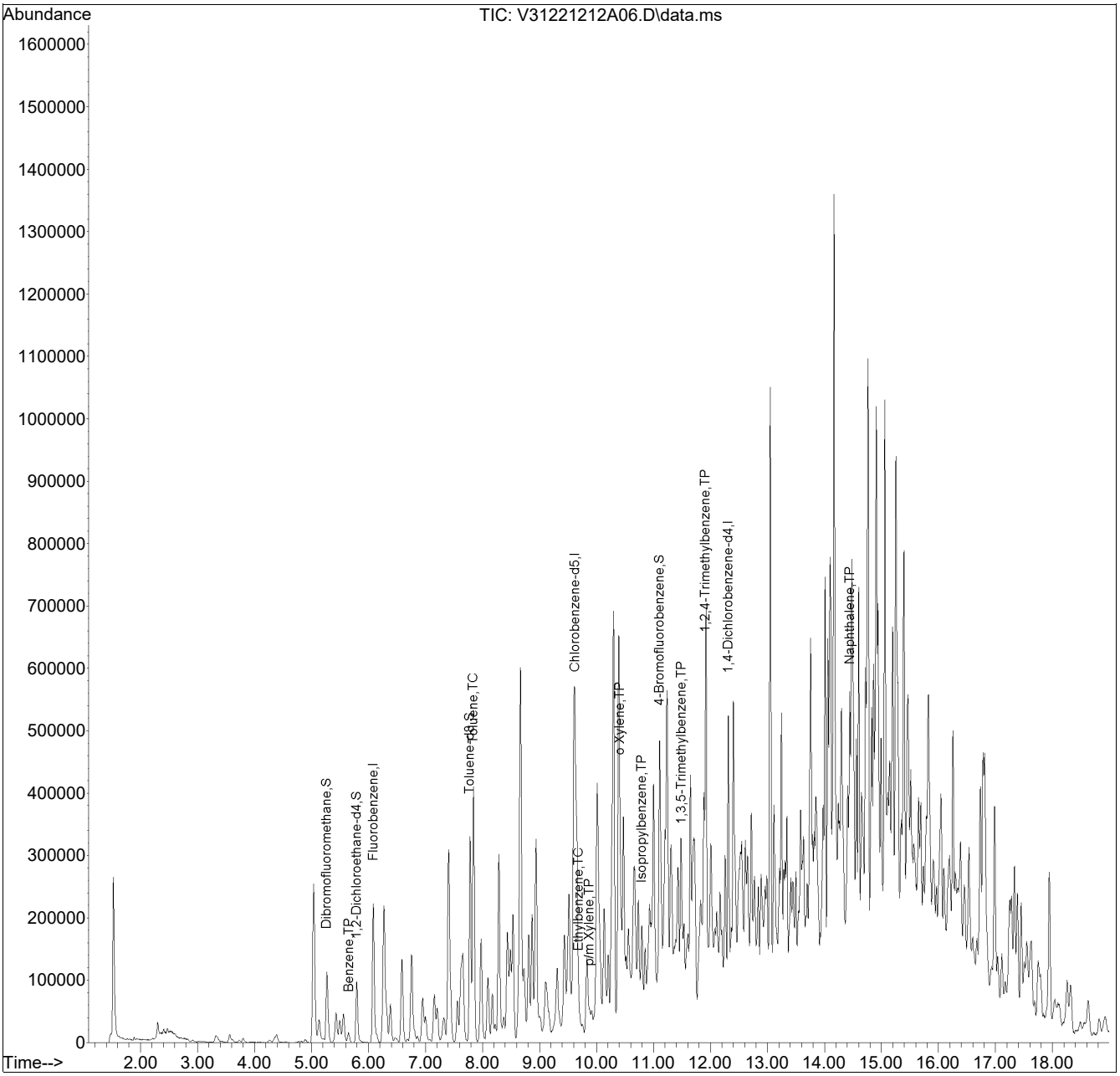
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212A\
Data File : V31221212A06.D
Acq On : 12 Dec 2022 09:54 am
Operator : VOA131:NLK
Sample : L2268803-01,31H,4.42,5,0.100,,A,R2F
Misc : WG1722683,ICAL19531
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 12 14:12:47 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V31221212A01.D•

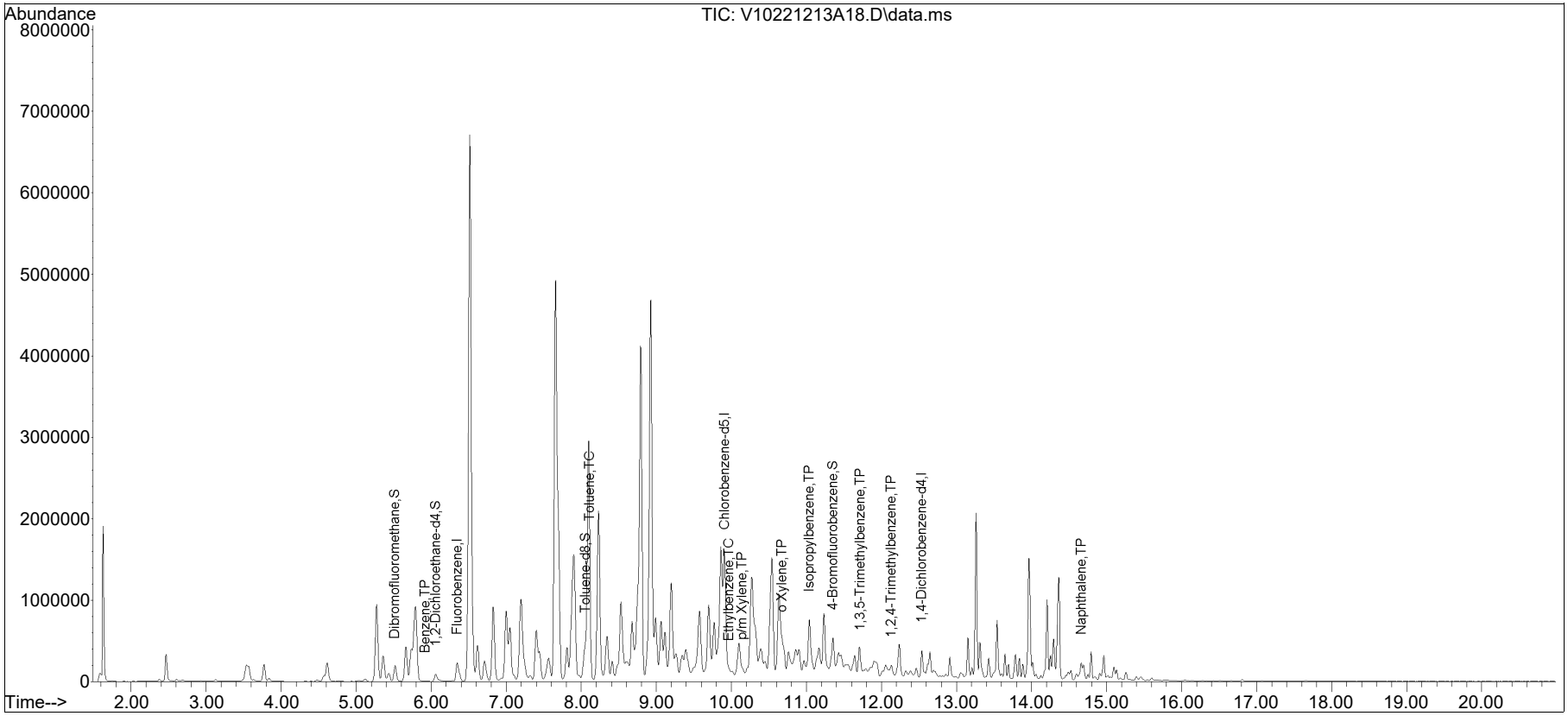


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221213A\
Data File : V10221213A18.D
Acq On : 13 Dec 2022 4:45 pm
Operator : VOA110:AJK
Sample : l2268803-02,31,4.10,5,,c,r2f
Misc : WG1722945,ICAL19281
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 13 18:29:34 2022
Quant Method : I:\VOLATILES\VOA110\2022\221213A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list13A\V10221213A01.D•

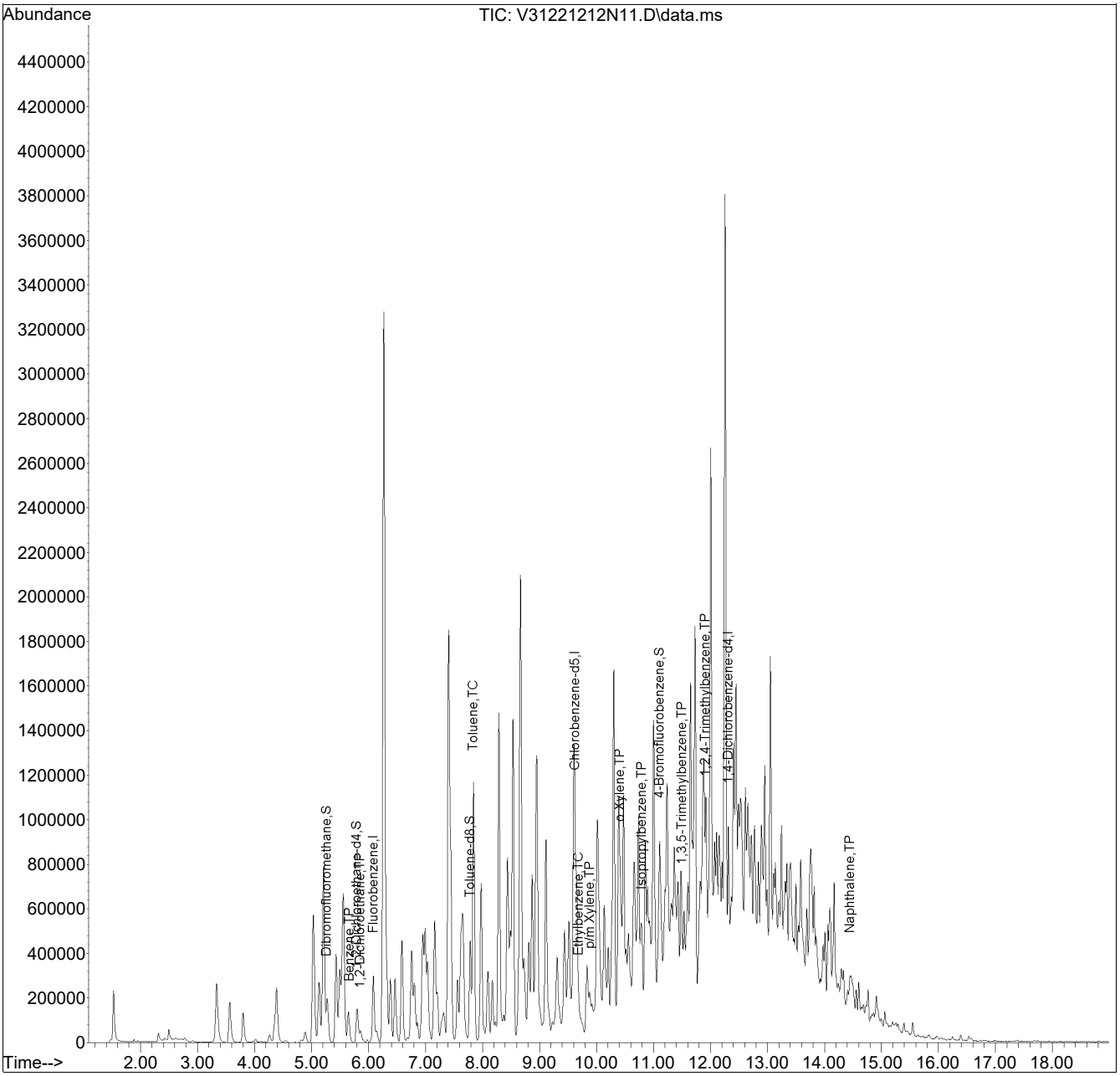


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N11.D
Acq On : 12 Dec 2022 10:38 pm
Operator : VOA131:NLK
Sample : L2268803-09,31H,5.65,5,0.100,,A,R2F
Misc : WG1722648,ICAL19531
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 13 07:50:51 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

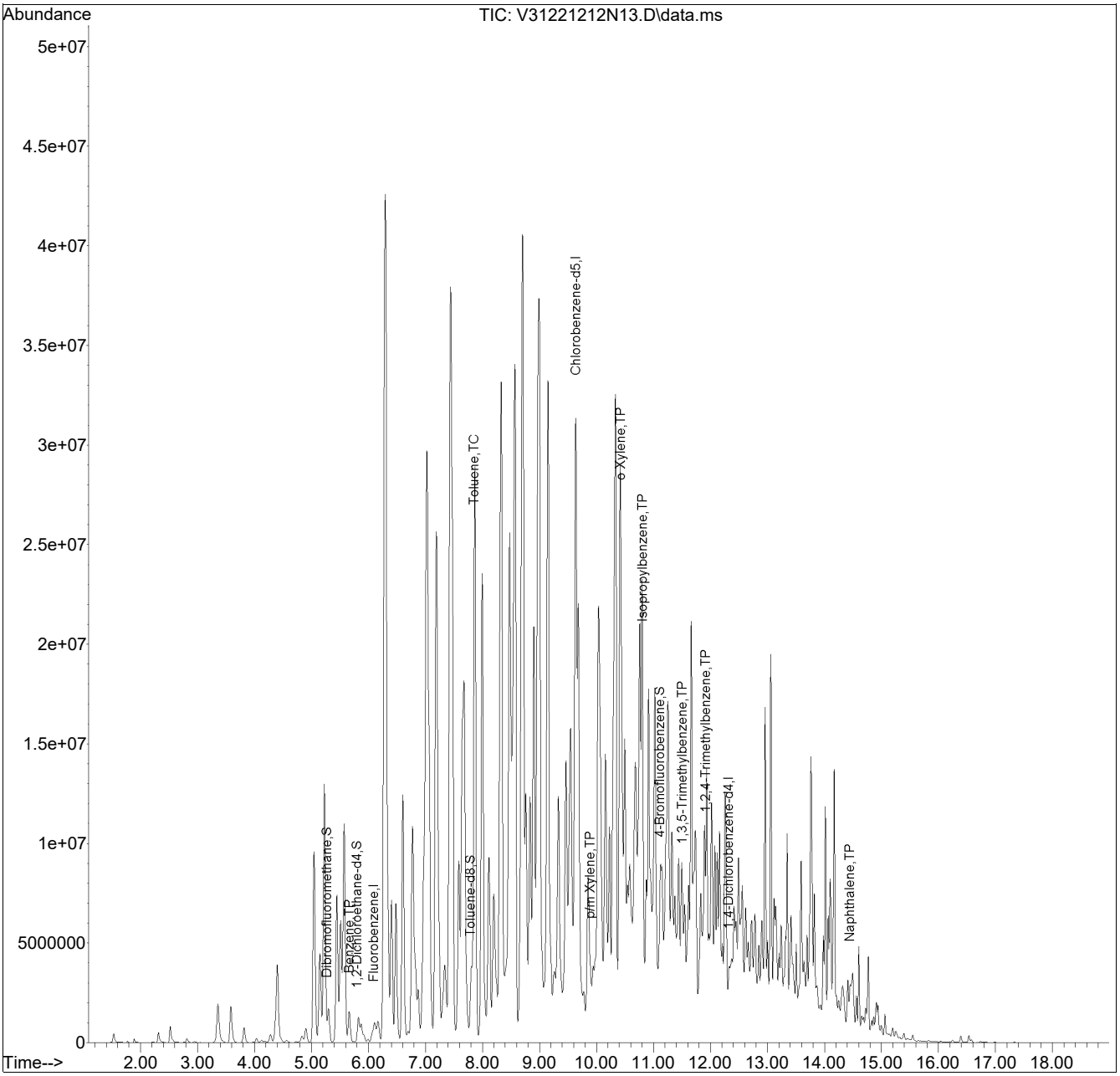


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N13.D
Acq On : 12 Dec 2022 11:24 pm
Operator : VOA131:NLK
Sample : L2268803-10,31,4.11,5,,B,R2F
Misc : WG1722651,ICAL19531
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 13 08:12:22 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

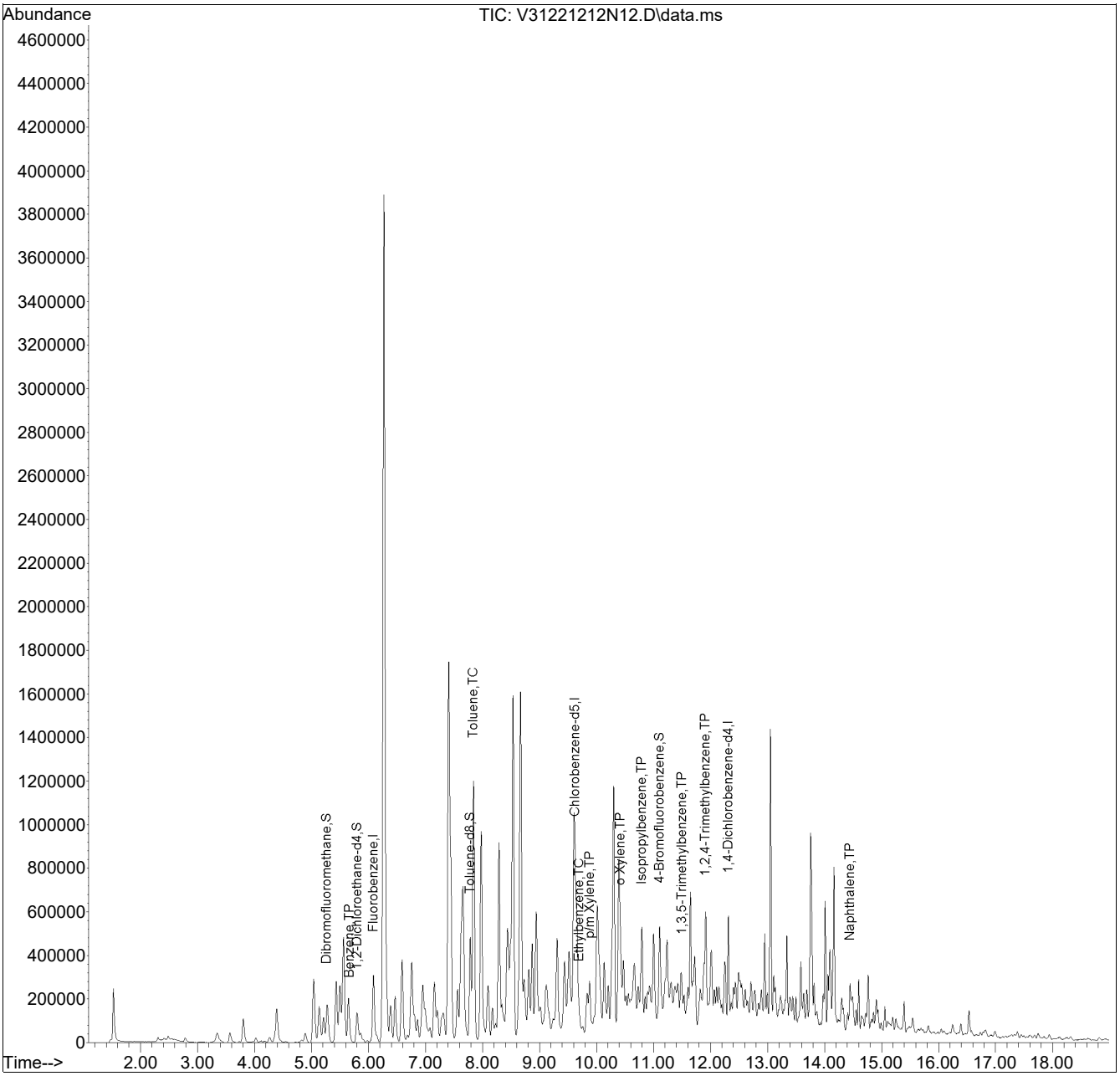


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221212N\
Data File : V31221212N12.D
Acq On : 12 Dec 2022 11:01 pm
Operator : VOA131:NLK
Sample : L2268803-11,31H,4.30,5,0.100,,A,R2F
Misc : WG1722648,ICAL19531
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 13 08:11:48 2022
Quant Method : I:\VOLATILES\VOA131\2022\221212N\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12N\V31221212N01.D•

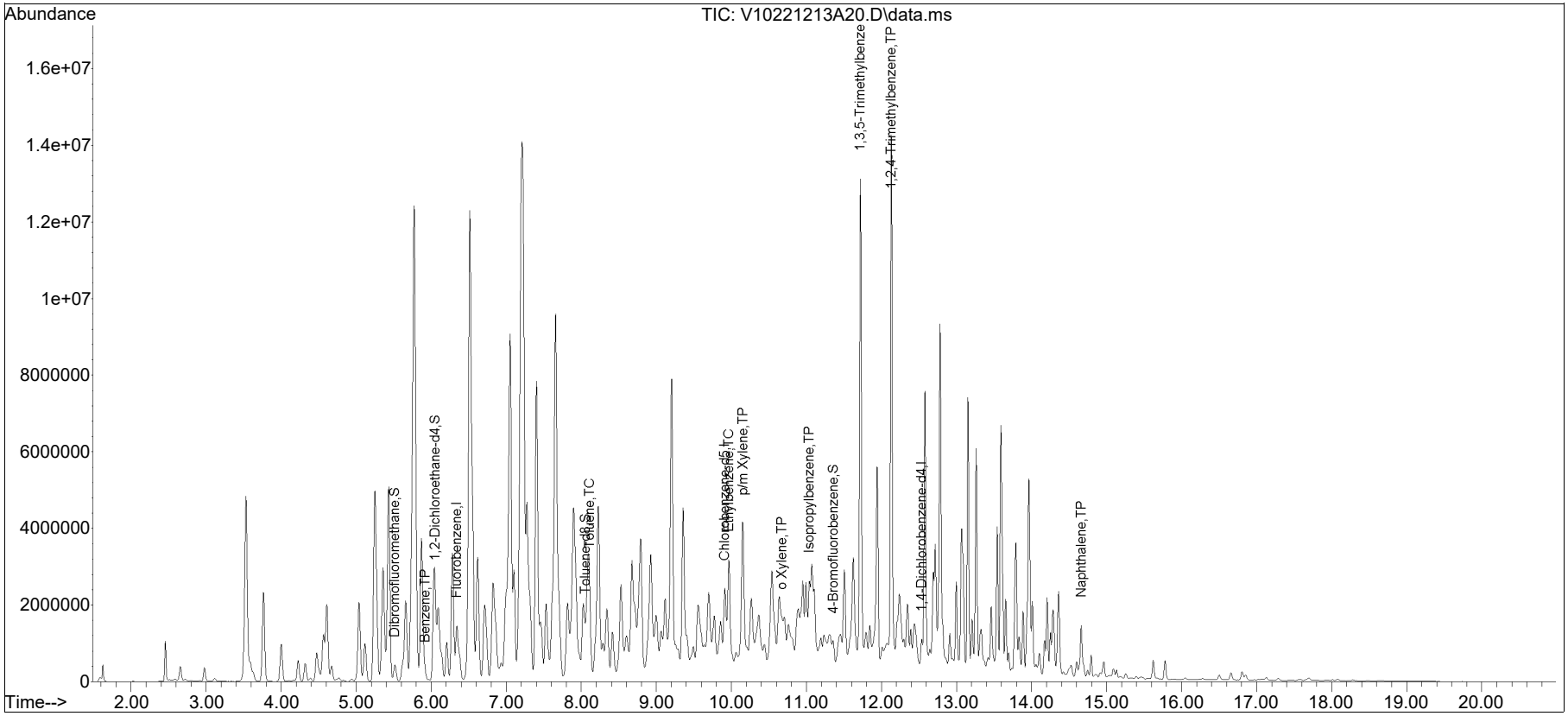


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\221213A\
Data File : V10221213A20.D
Acq On : 13 Dec 2022 5:40 pm
Operator : VOA110:AJK
Sample : l2268803-18d2,31h,4.23,5,0.05,,a,r2f
Misc : WG1722950,ICAL19281
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 13 18:30:51 2022
Quant Method : I:\VOLATILES\VOA110\2022\221213A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list13A\\V10221213A01.D•



ANALYTICAL REPORT

Lab Number:	L2269124
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/15/22

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269124-01	GPR286-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:30	12/08/22
L2269124-02	GPR286-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:40	12/08/22
L2269124-03	GPR286-05-SS01	SOIL	PHILADELPHIA, PA	12/08/22 09:50	12/08/22
L2269124-04	GPR286-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:00	12/08/22
L2269124-05	GPR286-08-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:10	12/08/22
L2269124-06	GPR286-11-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:20	12/08/22
L2269124-07	GPR286-13-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:30	12/08/22
L2269124-08	GPR286-16-SS01	SOIL	PHILADELPHIA, PA	12/08/22 10:40	12/08/22
L2269124-09	GPR270-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:10	12/08/22
L2269124-10	GPR270-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:20	12/08/22
L2269124-11	GPR270-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:30	12/08/22
L2269124-12	GPR270-08-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:40	12/08/22
L2269124-13	GPR270-09-SS01	SOIL	PHILADELPHIA, PA	12/08/22 11:50	12/08/22
L2269124-14	GPR270-11-SS01	SOIL	PHILADELPHIA, PA	12/08/22 12:00	12/08/22
L2269124-15	GPR270-13-SS01	SOIL	PHILADELPHIA, PA	12/08/22 12:10	12/08/22
L2269124-16	GPR1047-01-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:00	12/08/22
L2269124-17	GPR1047-02-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:10	12/08/22
L2269124-18	GPR1047-03-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:20	12/08/22
L2269124-19	GPR1047-04-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:30	12/08/22
L2269124-20	GPR1047-06-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:35	12/08/22
L2269124-21	GPR1047-07-SS01	SOIL	PHILADELPHIA, PA	12/08/22 13:50	12/08/22
L2269124-22	DUP-54	SOIL	PHILADELPHIA, PA	12/08/22 00:00	12/08/22
L2269124-23	FB-221208-1	WATER	PHILADELPHIA, PA	12/08/22 12:00	12/08/22
L2269124-24	FB-221208-2	WATER	PHILADELPHIA, PA	12/08/22 14:55	12/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269124-25	TB-221208	WATER	PHILADELPHIA, PA	12/08/22 00:00	12/08/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2269124-06, -10, and -11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2269124-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (146%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-09: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2269124-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (226%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (163%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (159%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-13: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (133%) and 4-bromofluorobenzene (173%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269124-14: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (151%) and 4-

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

Case Narrative (continued)

bromofluorobenzene (188%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables

The WG1721462-2 LCS recovery for 1,2-dibromoethane (73%), associated with L2269124-23, -24, and -25, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM

The WG1722646-1 Method Blank, associated with L2269124-23 and -24, has a concentration above the reporting limit for Benzo(a)anthracene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals

The WG1721469-3 MS recovery, performed on L2269124-01, is outside the acceptance criteria for lead (138%). A post digestion spike was performed and yielded unacceptable recoveries for lead (158%). The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.

The WG1721469-4 Laboratory Duplicate RPD for lead (34%), performed on L2269124-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/15/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/13/22 14:56
Analyst: AJK
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.25	0.025	1
Benzene	0.066		mg/kg	0.062	0.020	1
1,2-Dichloroethane	ND		mg/kg	0.12	0.032	1
Toluene	1.2		mg/kg	0.12	0.067	1
1,2-Dibromoethane	ND		mg/kg	0.062	0.036	1
Ethylbenzene	1.9		mg/kg	0.12	0.017	1
p/m-Xylene	6.0		mg/kg	0.25	0.069	1
o-Xylene	1.1		mg/kg	0.12	0.036	1
Xylenes, Total	7.1		mg/kg	0.12	0.036	1
Isopropylbenzene	11.		mg/kg	0.12	0.013	1
1,3,5-Trimethylbenzene	0.37		mg/kg	0.25	0.024	1
1,2,4-Trimethylbenzene	5.2		mg/kg	0.25	0.041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:14
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00035	1
Benzene	ND		mg/kg	0.00086	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00096	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	0.00039	J	mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 13:40
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	ND		mg/kg	0.0013	0.00037	1
Xylenes, Total	ND		mg/kg	0.0013	0.00037	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:06
Analyst: NLK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00076	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	119		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 14:32
Analyst: NLK
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00085	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00092	1
1,2-Dibromoethane	ND		mg/kg	0.00085	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00095	1
o-Xylene	ND		mg/kg	0.0017	0.00049	1
Xylenes, Total	ND		mg/kg	0.0017	0.00049	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	115		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 11:45
Analyst: JIC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	ND		mg/kg	0.026	0.0086	1
1,2-Dichloroethane	ND		mg/kg	0.052	0.013	1
Toluene	ND		mg/kg	0.052	0.028	1
1,2-Dibromoethane	ND		mg/kg	0.026	0.015	1
Ethylbenzene	ND		mg/kg	0.052	0.0073	1
p/m-Xylene	ND		mg/kg	0.10	0.029	1
o-Xylene	0.051	J	mg/kg	0.052	0.015	1
Xylenes, Total	0.051	J	mg/kg	0.052	0.015	1
Isopropylbenzene	0.57		mg/kg	0.052	0.0057	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.010	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**146**	Q	70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:24
Analyst: NLK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 15:50
Analyst: NLK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00052	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00059	1
Xylenes, Total	ND		mg/kg	0.0020	0.00059	1
Isopropylbenzene	ND		mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 16:15
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.036	J	mg/kg	0.054	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	0.80		mg/kg	0.11	0.059	1
1,2-Dibromoethane	ND		mg/kg	0.054	0.032	1
Ethylbenzene	0.051	J	mg/kg	0.11	0.015	1
p/m-Xylene	0.13	J	mg/kg	0.22	0.061	1
o-Xylene	0.055	J	mg/kg	0.11	0.032	1
Xylenes, Total	0.18	J	mg/kg	0.11	0.032	1
Isopropylbenzene	0.048	J	mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	0.087	J	mg/kg	0.22	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 13:17
Analyst: NLK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0015	J	mg/kg	0.0033	0.00092	1
o-Xylene	0.0040		mg/kg	0.0016	0.00048	1
Xylenes, Total	0.0055	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.0058		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0031	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**226**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 11:22
Analyst: JIC
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.23	0.023	1
Benzene	0.061		mg/kg	0.057	0.019	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.029	1
Toluene	0.96		mg/kg	0.11	0.062	1
1,2-Dibromoethane	ND		mg/kg	0.057	0.034	1
Ethylbenzene	0.075	J	mg/kg	0.11	0.016	1
p/m-Xylene	0.21	J	mg/kg	0.23	0.064	1
o-Xylene	0.039	J	mg/kg	0.11	0.033	1
Xylenes, Total	0.25	J	mg/kg	0.11	0.033	1
Isopropylbenzene	0.21		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.034	J	mg/kg	0.23	0.022	1
1,2,4-Trimethylbenzene	0.12	J	mg/kg	0.23	0.038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**163**	Q	70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 10:59
Analyst: JIC
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	0.064	J	mg/kg	0.066	0.022	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.034	1
Toluene	0.99		mg/kg	0.13	0.072	1
1,2-Dibromoethane	ND		mg/kg	0.066	0.039	1
Ethylbenzene	0.075	J	mg/kg	0.13	0.019	1
p/m-Xylene	0.20	J	mg/kg	0.26	0.074	1
o-Xylene	0.083	J	mg/kg	0.13	0.038	1
Xylenes, Total	0.28	J	mg/kg	0.13	0.038	1
Isopropylbenzene	0.27		mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.035	J	mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	0.13	J	mg/kg	0.26	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**159**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 17:33
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00066	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	114		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:00
Analyst: NLK
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.0014	J	mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.00026	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0029	0.00082	1
o-Xylene	0.00080	J	mg/kg	0.0015	0.00043	1
Xylenes, Total	0.00080	J	mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.00073	J	mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00032	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0010	J	mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	**133**	Q	70-130
4-Bromofluorobenzene	**173**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:26
Analyst: NLK
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	0.00060	J	mg/kg	0.0017	0.00025	1
p/m-Xylene	0.00099	J	mg/kg	0.0035	0.00098	1
o-Xylene	0.0023		mg/kg	0.0017	0.00051	1
Xylenes, Total	0.0033	J	mg/kg	0.0017	0.00051	1
Isopropylbenzene	0.0033		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.00049	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.00098	J	mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	**151**	Q	70-130
4-Bromofluorobenzene	**188**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 18:52
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00077	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 15:59
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:03
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 16:10
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:23
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-25
Client ID: TB-221208
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/09/22 16:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-25
Client ID: TB-221208
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:44
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	123		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/09/22 14:21
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 12/09/22 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 23-25 Batch: WG1721462-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2269124

Project Number: 200.00135.006 **Report Date:** 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-05,07-08,12-15 Batch: WG1722715-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2269124

Project Number: 200.00135.006 **Report Date:** 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09 Batch: WG1722718-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 09:42
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 23-25 Batch: WG1722884-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/22 10:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1722950-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	113		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 06,10-11 Batch: WG1723588-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 09 Batch: WG1723589-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 23-25 Batch: WG1721462-2								
1,2-Dibromoethane	**73**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-05,07-08,12-15 Batch: WG1722715-3 WG1722715-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	93		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG1722718-3 WG1722718-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 23-25 Batch: WG1722884-3 WG1722884-4								
Methyl tert butyl ether	98		95		63-130	3		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
p/m-Xylene	115		115		70-130	0		20
o-Xylene	115		115		70-130	0		20
Isopropylbenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		106		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	88		88		70-130
Dibromofluoromethane	113		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1722950-3 WG1722950-4								
Methyl tert butyl ether	92		93		66-130	1		30
Benzene	96		93		70-130	3		30
1,2-Dichloroethane	96		96		70-130	0		30
Toluene	91		89		70-130	2		30
1,2-Dibromoethane	96		96		70-130	0		30
Ethylbenzene	93		89		70-130	4		30
p/m-Xylene	98		95		70-130	3		30
o-Xylene	96		93		70-130	3		30
Isopropylbenzene	94		91		70-130	3		30
1,3,5-Trimethylbenzene	96		93		70-130	3		30
1,2,4-Trimethylbenzene	97		94		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		98		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	93		91		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 06,10-11 Batch: WG1723588-3 WG1723588-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	96		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 09 Batch: WG1723589-3 WG1723589-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	95		96		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:15
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.	E	mg/kg	0.24	0.029	1
Fluorene	1.0		mg/kg	0.24	0.023	1
Phenanthrene	4.9		mg/kg	0.14	0.028	1
Anthracene	1.2		mg/kg	0.14	0.046	1
Pyrene	5.5		mg/kg	0.14	0.023	1
Benzo(a)anthracene	3.1		mg/kg	0.14	0.026	1
Chrysene	3.3		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	4.5		mg/kg	0.14	0.040	1
Benzo(a)pyrene	3.3		mg/kg	0.19	0.057	1
Benzo(ghi)perylene	2.3		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01 D
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:11
Analyst: LJG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	1.2	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:39
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.4		mg/kg	0.25	0.031	1
Fluorene	0.27		mg/kg	0.25	0.025	1
Phenanthrene	1.4		mg/kg	0.15	0.031	1
Anthracene	0.39		mg/kg	0.15	0.050	1
Pyrene	1.1		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.97		mg/kg	0.15	0.029	1
Chrysene	0.95		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.4		mg/kg	0.15	0.043	1
Benzo(a)pyrene	1.1		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.67		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:03
Analyst: JG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.037	1
Pyrene	ND		mg/kg	0.11	0.019	1
Benzo(a)anthracene	ND		mg/kg	0.11	0.021	1
Chrysene	ND		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.032	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	118		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:27
Analyst: JG
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.0		mg/kg	0.23	0.028	1
Fluorene	0.36		mg/kg	0.23	0.022	1
Phenanthrene	1.9		mg/kg	0.14	0.028	1
Anthracene	0.56		mg/kg	0.14	0.044	1
Pyrene	2.3		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.7		mg/kg	0.14	0.026	1
Chrysene	1.8		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.5		mg/kg	0.14	0.038	1
Benzo(a)pyrene	2.0		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.2		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:51
Analyst: JG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.59		mg/kg	0.24	0.029	1
Fluorene	0.054	J	mg/kg	0.24	0.023	1
Phenanthrene	0.24		mg/kg	0.14	0.029	1
Anthracene	0.077	J	mg/kg	0.14	0.047	1
Pyrene	0.34		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.20		mg/kg	0.14	0.027	1
Chrysene	0.20		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.25		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.22		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**148**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 15:52
Analyst: JG
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.18	0.022	1
Fluorene	0.071	J	mg/kg	0.18	0.018	1
Phenanthrene	0.35		mg/kg	0.11	0.022	1
Anthracene	0.094	J	mg/kg	0.11	0.036	1
Pyrene	0.38		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.27		mg/kg	0.11	0.021	1
Chrysene	0.29		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.39		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.33		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.21		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:16
Analyst: JG
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.		mg/kg	0.26	0.032	1
Fluorene	0.46		mg/kg	0.26	0.025	1
Phenanthrene	2.1		mg/kg	0.16	0.032	1
Anthracene	0.90		mg/kg	0.16	0.051	1
Pyrene	1.6		mg/kg	0.16	0.026	1
Benzo(a)anthracene	1.7		mg/kg	0.16	0.029	1
Chrysene	1.8		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	2.8		mg/kg	0.16	0.044	1
Benzo(a)pyrene	2.5		mg/kg	0.21	0.064	1
Benzo(ghi)perylene	1.9		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 16:40
Analyst: JG
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.24	0.030	1
Fluorene	ND		mg/kg	0.24	0.024	1
Phenanthrene	0.031	J	mg/kg	0.15	0.030	1
Anthracene	ND		mg/kg	0.15	0.048	1
Pyrene	0.060	J	mg/kg	0.15	0.024	1
Benzo(a)anthracene	0.036	J	mg/kg	0.15	0.028	1
Chrysene	0.032	J	mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	ND		mg/kg	0.15	0.041	1
Benzo(a)pyrene	ND		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	ND		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:04
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.	E	mg/kg	0.25	0.031	1
Fluorene	2.1		mg/kg	0.25	0.025	1
Phenanthrene	5.8		mg/kg	0.15	0.031	1
Anthracene	2.7		mg/kg	0.15	0.049	1
Pyrene	6.1		mg/kg	0.15	0.025	1
Benzo(a)anthracene	3.2		mg/kg	0.15	0.028	1
Chrysene	3.6		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	3.7		mg/kg	0.15	0.043	1
Benzo(a)pyrene	3.1		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	2.2		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**126**	Q	23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09 D
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:34
Analyst: LJG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	15.		mg/kg	1.3	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:28
Analyst: JG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.	E	mg/kg	0.25	0.030	1
Fluorene	6.0		mg/kg	0.25	0.024	1
Phenanthrene	22.	E	mg/kg	0.15	0.030	1
Anthracene	5.3		mg/kg	0.15	0.049	1
Pyrene	13.	E	mg/kg	0.15	0.025	1
Benzo(a)anthracene	4.8		mg/kg	0.15	0.028	1
Chrysene	5.4		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	3.3		mg/kg	0.15	0.042	1
Benzo(a)pyrene	2.9		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	1.4		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**189**	Q	23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10 D
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 08:44
Analyst: LJG
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.		mg/kg	1.2	0.15	5
Phenanthrene	23.		mg/kg	0.75	0.15	5
Pyrene	13.		mg/kg	0.75	0.12	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 17:52
Analyst: JG
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	9.1		mg/kg	0.28	0.034	1
Fluorene	5.4		mg/kg	0.28	0.027	1
Phenanthrene	19.	E	mg/kg	0.17	0.034	1
Anthracene	4.7		mg/kg	0.17	0.054	1
Pyrene	12.	E	mg/kg	0.17	0.028	1
Benzo(a)anthracene	4.4		mg/kg	0.17	0.031	1
Chrysene	4.8		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	3.5		mg/kg	0.17	0.047	1
Benzo(a)pyrene	2.8		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	1.4		mg/kg	0.22	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**196**	Q	23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11 D
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 07:58
Analyst: LJG
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	20.		mg/kg	0.84	0.17	5
Pyrene	12.		mg/kg	0.84	0.14	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:15
Analyst: JG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.23	0.028	1
Fluorene	ND		mg/kg	0.23	0.022	1
Phenanthrene	0.053	J	mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.045	1
Pyrene	0.054	J	mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.045	J	mg/kg	0.14	0.026	1
Chrysene	0.037	J	mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	ND		mg/kg	0.14	0.039	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.057	1
Benzo(ghi)perylene	ND		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:40
Analyst: JG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.7		mg/kg	0.22	0.027	1
Fluorene	5.0		mg/kg	0.22	0.022	1
Phenanthrene	13.	E	mg/kg	0.13	0.027	1
Anthracene	4.6		mg/kg	0.13	0.043	1
Pyrene	12.	E	mg/kg	0.13	0.022	1
Benzo(a)anthracene	4.8		mg/kg	0.13	0.025	1
Chrysene	4.9		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	4.0		mg/kg	0.13	0.037	1
Benzo(a)pyrene	3.2		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	1.6		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**178**	Q	23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13 D
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 08:21
Analyst: LJG
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	13.		mg/kg	0.67	0.14	5
Pyrene	11.		mg/kg	0.67	0.11	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:04
Analyst: JG
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	19.	E	mg/kg	0.26	0.032	1
Fluorene	1.2		mg/kg	0.26	0.026	1
Phenanthrene	5.7		mg/kg	0.16	0.032	1
Anthracene	2.9		mg/kg	0.16	0.051	1
Pyrene	2.7		mg/kg	0.16	0.026	1
Benzo(a)anthracene	2.1		mg/kg	0.16	0.030	1
Chrysene	2.4		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	2.9		mg/kg	0.16	0.044	1
Benzo(a)pyrene	2.8		mg/kg	0.21	0.064	1
Benzo(ghi)perylene	3.5		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14 D
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/22 09:08
Analyst: LJG
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	20.		mg/kg	1.3	0.16	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:27
Analyst: JG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.030	J	mg/kg	0.20	0.024	1
Fluorene	0.046	J	mg/kg	0.20	0.019	1
Phenanthrene	0.31		mg/kg	0.12	0.024	1
Anthracene	0.091	J	mg/kg	0.12	0.038	1
Pyrene	0.42		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.32		mg/kg	0.12	0.022	1
Chrysene	0.37		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.42		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.32		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.20		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/14/22 10:28
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	66		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/14/22 10:44
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.01	J	ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	67		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/11/22 09:26
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-15 Batch: WG1721610-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	91		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/13/22 13:50
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/13/22 09:47

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 23-24 Batch: WG1722646-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.06		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	64		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-15 Batch: WG1721610-2 WG1721610-3								
Naphthalene	82		76		40-140	8		50
Fluorene	86		80		40-140	7		50
Phenanthrene	78		75		40-140	4		50
Anthracene	82		77		40-140	6		50
Pyrene	87		83		35-142	5		50
Benzo(a)anthracene	85		80		40-140	6		50
Chrysene	83		79		40-140	5		50
Benzo(b)fluoranthene	92		86		40-140	7		50
Benzo(a)pyrene	93		86		40-140	8		50
Benzo(ghi)perylene	86		81		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	117		23-120
2-Fluorobiphenyl	98		90		30-120
4-Terphenyl-d14	90		87		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 23-24 Batch: WG1722646-2 WG1722646-3								
Naphthalene	67		41		40-140	**48**	Q	40
Fluorene	72		43		40-140	**50**	Q	40
Phenanthrene	72		44		40-140	**48**	Q	40
Anthracene	75		45		40-140	**50**	Q	40
Pyrene	74		47		26-127	**45**	Q	40
Benzo(a)anthracene	78		47		40-140	**50**	Q	40
Chrysene	80		46		40-140	**54**	Q	40
Benzo(b)fluoranthene	78		46		40-140	**52**	Q	40
Benzo(a)pyrene	83		48		40-140	**53**	Q	40
Benzo(ghi)perylene	82		46		40-140	**56**	Q	40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	110		66		23-120
2-Fluorobiphenyl	69		42		15-120
4-Terphenyl-d14	71		46		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	143		mg/kg	2.80	0.150	1	12/10/22 00:05	12/10/22 14:22	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	295		mg/kg	2.94	0.158	1	12/10/22 00:05	12/10/22 14:12	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4.98		mg/kg	2.26	0.121	1	12/10/22 00:05	12/10/22 14:16	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	142		mg/kg	2.66	0.142	1	12/10/22 00:05	12/10/22 14:19	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	182		mg/kg	2.88	0.154	1	12/10/22 00:05	12/10/22 14:46	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	48.9		mg/kg	2.19	0.118	1	12/10/22 00:05	12/10/22 14:50	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	302		mg/kg	3.13	0.168	1	12/10/22 00:05	12/10/22 14:53	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	7.52		mg/kg	2.93	0.157	1	12/10/22 00:05	12/10/22 14:57	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	341		mg/kg	3.01	0.161	1	12/10/22 00:05	12/10/22 15:00	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	450		mg/kg	3.05	0.164	1	12/10/22 00:05	12/10/22 15:03	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	537		mg/kg	3.42	0.184	1	12/10/22 00:05	12/10/22 15:07	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.9		mg/kg	2.85	0.153	1	12/10/22 00:05	12/10/22 15:10	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	400		mg/kg	2.62	0.140	1	12/10/22 00:05	12/10/22 15:14	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	589		mg/kg	3.04	0.163	1	12/10/22 00:05	12/10/22 15:17	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	215		mg/kg	2.36	0.126	1	12/10/22 00:05	12/10/22 15:27	EPA 3050B	1,6010D	NTB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-23
Client ID: FB-221208-1
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 08:39	EPA 3005A	1,6020B	EGW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269124
Project Number: 200.00135.006
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-24
Client ID: FB-221208-2
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 14:55
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 10:01	EPA 3005A	1,6020B	EGW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-15 Batch: WG1721469-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/10/22 00:05	12/10/22 14:05	1,6010D	NTB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 23-24 Batch: WG1721513-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/10/22 17:00	12/15/22 09:17	1,6020B	EGW

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 Batch: WG1721469-2 SRM Lot Number: D116-540								
Lead, Total	104		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 23-24 Batch: WG1721513-2								
Lead, Total	98		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG1721469-3 QC Sample: L2269124-01 Client ID: GPR286-01-SS01												
Lead, Total	143	58.8	224	**138**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 23-24 QC Batch ID: WG1721513-3 QC Sample: L2269204-01 Client ID: MS Sample												
Lead, Total	1.516	530	528.7	99		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-15 QC Batch ID: WG1721469-4 QC Sample: L2269124-01 Client ID: GPR286-01-SS01						
Lead, Total	143	201	mg/kg	**34**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-01
Client ID: GPR286-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.7		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-02
Client ID: GPR286-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-03
Client ID: GPR286-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 09:50
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-04
Client ID: GPR286-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-05
Client ID: GPR286-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.8		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-06
Client ID: GPR286-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-07
Client ID: GPR286-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-08
Client ID: GPR286-16-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 10:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-09
Client ID: GPR270-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-10
Client ID: GPR270-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-11
Client ID: GPR270-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.2		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-12
Client ID: GPR270-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:40
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-13
Client ID: GPR270-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 11:50
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.6		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-14
Client ID: GPR270-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 12:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	62.4		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-15
Client ID: GPR270-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 12:10
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-16
Client ID: GPR1047-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.5		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-17
Client ID: GPR1047-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 13:10
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	7.5		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-18
Client ID: GPR1047-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:20
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-19
Client ID: GPR1047-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 13:30
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.0		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	8.8		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-20
Client ID: GPR1047-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/08/22 13:35
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.3		%	0.100	NA	1	-	12/09/22 17:56	121,2540G	MF
pH (H)	9.0		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-21
Client ID: GPR1047-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/08/22 13:50
Date Received: 12/08/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.3		%	0.100	NA	1	-	12/09/22 18:26	121,2540G	MF
pH (H)	10.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269124
Report Date: 12/15/22

SAMPLE RESULTS

Lab ID: L2269124-22
Client ID: DUP-54
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/08/22 00:00
Date Received: 12/08/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.5		%	0.100	NA	1	-	12/09/22 18:26	121,2540G	MF
pH (H)	10.7		SU	-	NA	1	-	12/14/22 21:54	1,9045D	AAS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 16-22 Batch: WG1723412-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269124

Report Date: 12/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1721563-1 QC Sample: L2269124-01 Client ID: GPR286-01-SS01						
Solids, Total	68.7	67.8	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 21-22 QC Batch ID: WG1721568-1 QC Sample: L2266778-08 Client ID: DUP Sample						
Solids, Total	88.1	87.5	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 16-22 QC Batch ID: WG1723412-2 QC Sample: L2267361-01 Client ID: DUP Sample						
pH	8.4	8.3	SU	1		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-01A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-01B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-01C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-01D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-01F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-02A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-02B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-02C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-02D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-02F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-03A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-03B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-03C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-03D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-03F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-04A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-04B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-04C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-04D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-04F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-05A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-05B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-05C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-05D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-05F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-06A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-06B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-06C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-06D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-06F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-07A	Vial MeOH preserved	B	NA		2.1	Y	Absent		PA-8260HLW(14)
L2269124-07B	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-07C	Vial water preserved	B	NA		2.1	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-07D	Plastic 2oz unpreserved for TS	B	NA		2.1	Y	Absent		TS(7)
L2269124-07E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.1	Y	Absent		PB-TI(180)
L2269124-07F	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		PA-PAH(14)
L2269124-08A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-08B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-08C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-08D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-08F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-09A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2269124-09B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260H(14),PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-09C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260H(14),PA-8260HLW(14)
L2269124-09D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-09F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-10A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-10B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-10C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-10D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-10F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-11A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-11B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-11C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-11D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-11F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-12A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-12B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-12C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-12D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-12F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-13A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-13B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-13C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-13D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-13F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-14A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-14B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-14C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-14D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-14E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-14F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-15A	Vial MeOH preserved	A	NA		4.7	Y	Absent		PA-8260HLW(14)
L2269124-15B	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-15C	Vial water preserved	A	NA		4.7	Y	Absent	09-DEC-22 12:37	PA-8260HLW(14)
L2269124-15D	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		TS(7)
L2269124-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2269124-15F	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PA-PAH(14)
L2269124-16A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		TS(7),PH-9045(1)
L2269124-17A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		TS(7),PH-9045(1)
L2269124-18A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-19A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-20A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-21A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-22A	Glass 120ml/4oz unpreserved	B	NA		2.1	Y	Absent		TS(7),PH-9045(1)
L2269124-23A	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23B	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23C	Vial HCl preserved	B	NA		2.1	Y	Absent		PA-8260(14)
L2269124-23D	Vial Na2S2O3 preserved	B	NA		2.1	Y	Absent		8011(14)
L2269124-23E	Vial Na2S2O3 preserved	B	NA		2.1	Y	Absent		8011(14)
L2269124-23F	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		PB-6020T-PPB(180)
L2269124-23G	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-23H	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-24A	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269124
Report Date: 12/15/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269124-24B	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-24C	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-24D	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-24E	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		PB-6020T-PPB(180)
L2269124-24F	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-24G	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		PA-PAHSIM-LVI(7)
L2269124-25A	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-25B	Vial HCl preserved	A	NA		4.7	Y	Absent		PA-8260(14)
L2269124-25C	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)
L2269124-25D	Vial Na2S2O3 preserved	A	NA		4.7	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269124
Project Number:	200.00135.006	**Report Date:**	12/15/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~17161~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	Sample Specific Comments	TOTAL # BOTTLES
69124-01	GPR286-01-5501	12/8	0930	S	TS	☑	☑	☑		
-02	GPR286-03-5501		0940			☑	☑	☑		
-03	GPR286-05-5501		0950			☑	☑	☑		
-04	GPR286-07-5501		1000			☑	☑	☑		
-05	GPR286-08-5501		1010			☑	☑	☑		
-06	GPR286-11-5501		1020			☑	☑	☑		
-07	GPR286-13-5501		1030			☑	☑	☑		
-08	GPR286-16-5501		1040			☑	☑	☑		
-09	GPR270-01-5501		1110			☑	☑	☑		
-10	GPR270-03-5501	↓	1120	↓	↓	☑	☑	☑		
	Container Type					G	G	G		
	Preservative					F	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/8 1456	SDOLLS AM	1454 12-8
SDOLLS AM	12.8.190		12.8.22 GW
	12.8 2100		12-9-22 0110

12/9/22 0110

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

ALPHA ANALYTICAL — Customer Service

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~17161~~ ~~17853~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	1,4-D	Sample Specific Comments	TOTAL # BOTTLES
2269124-11	GPR270-07-5501	12/6	1130	S	TS	☑	☑	☑	☐		4
-12	GPR 270-08-5501		1140			☑	☑	☑	☐		
-13	GPR 270-09-5501		1150			☑	☑	☑	☐		
-14	GPR 270-11-5501		1200			☑	☑	☑	☐		
-15	GPR 270-13-5501		1210			☑	☑	☑	☐		
-16	GPR1047-01-5501		1300			☐	☐	☐	☑		
-17	GPR 1047-02-5501		1310			☐	☐	☐	☑		
-18	GPR 1047-03-5501		1320			☐	☐	☐	☑		
-19	GPR 1047-04-5501		1330			☐	☐	☐	☑		
-20	GPR 1047-06-5501	↓	1335	↓	↓	☐	☐	☐	☑		
	Container Type					G	G	G	-		
	Preservative					F	A	A	-		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Relinquished By:	Date/Time	Received By:	Date/Time
	11/16 1456		
	12-8-22 16		12-8-22 1415
	12-8 2120		12-9-22 2140

12/9/22 0110

12/9/22 0110

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 12/09/22

ALPHA Job #: L2269124

ALPHA ANALYTICAL — Advancing Performance

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	PAH									Sample Specific Comments	TOTAL # BOTTLES
69124-21	GPR1047-07-5501	12/8	1350	S	TS	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
	~~GPR1047-07-5502~~			S		☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-22	DUP-5.4	12/8	-	S		☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-23	FB-221208-1		1200	W		☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐		
-24	FB-22-1208-2		~~1155~~	W		☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	1455	
-25	TB-22-1208			W		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
				Container Type		G	G	G	-	-	-	-	-	-	-	-	-		
				Preservative		F	A	A	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	12/8 1456	STL SEAFS	12-8-22 1456
SCHMIDT	12-8-22 1810		12.9.22 10:20
			12.8.22 2140

12/9/22 0110

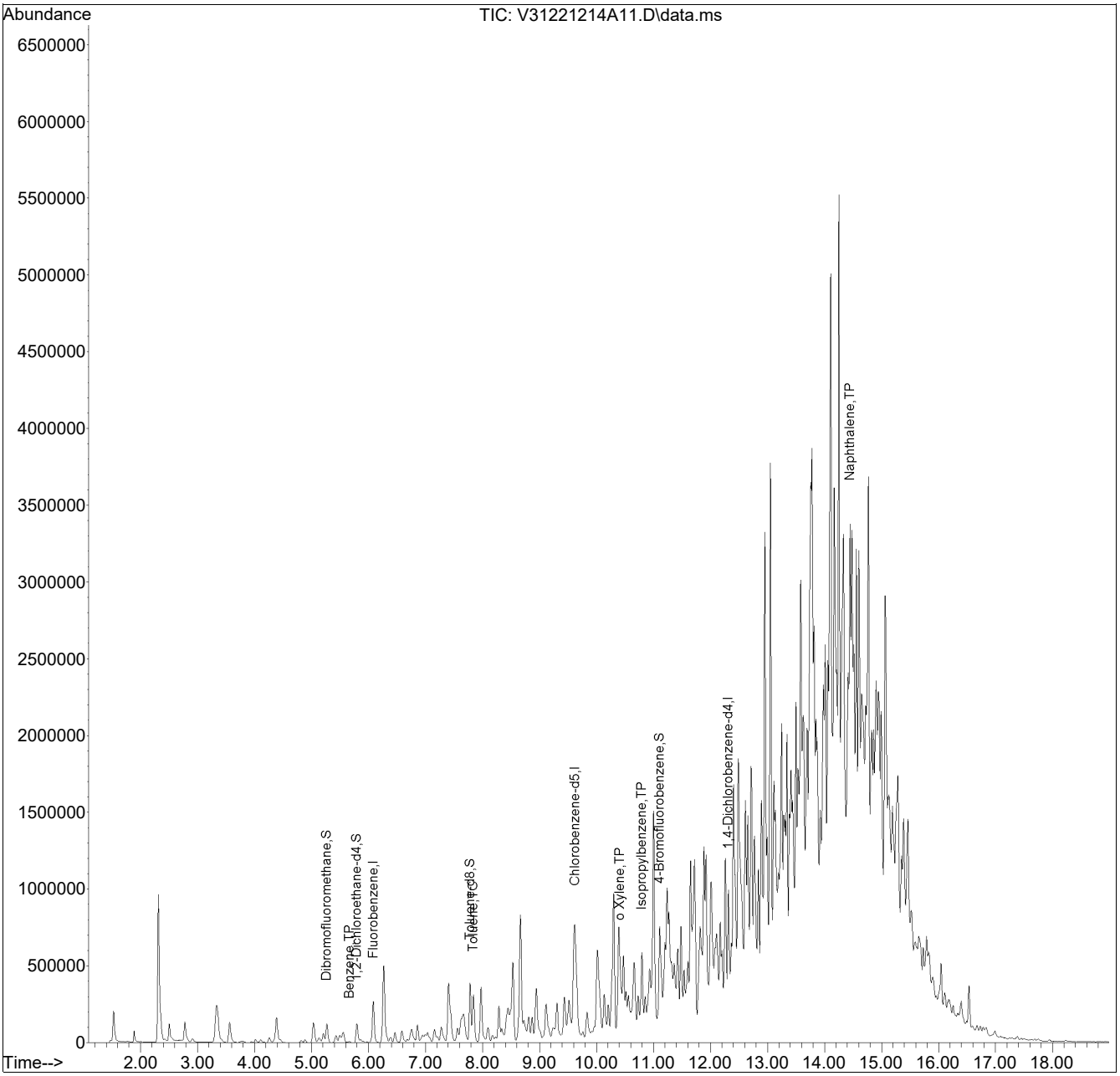
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A11.D
Acq On : 14 Dec 2022 11:45 am
Operator : VOA131:JIC
Sample : L2269124-06,31H,6.11,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 14 13:27:05 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

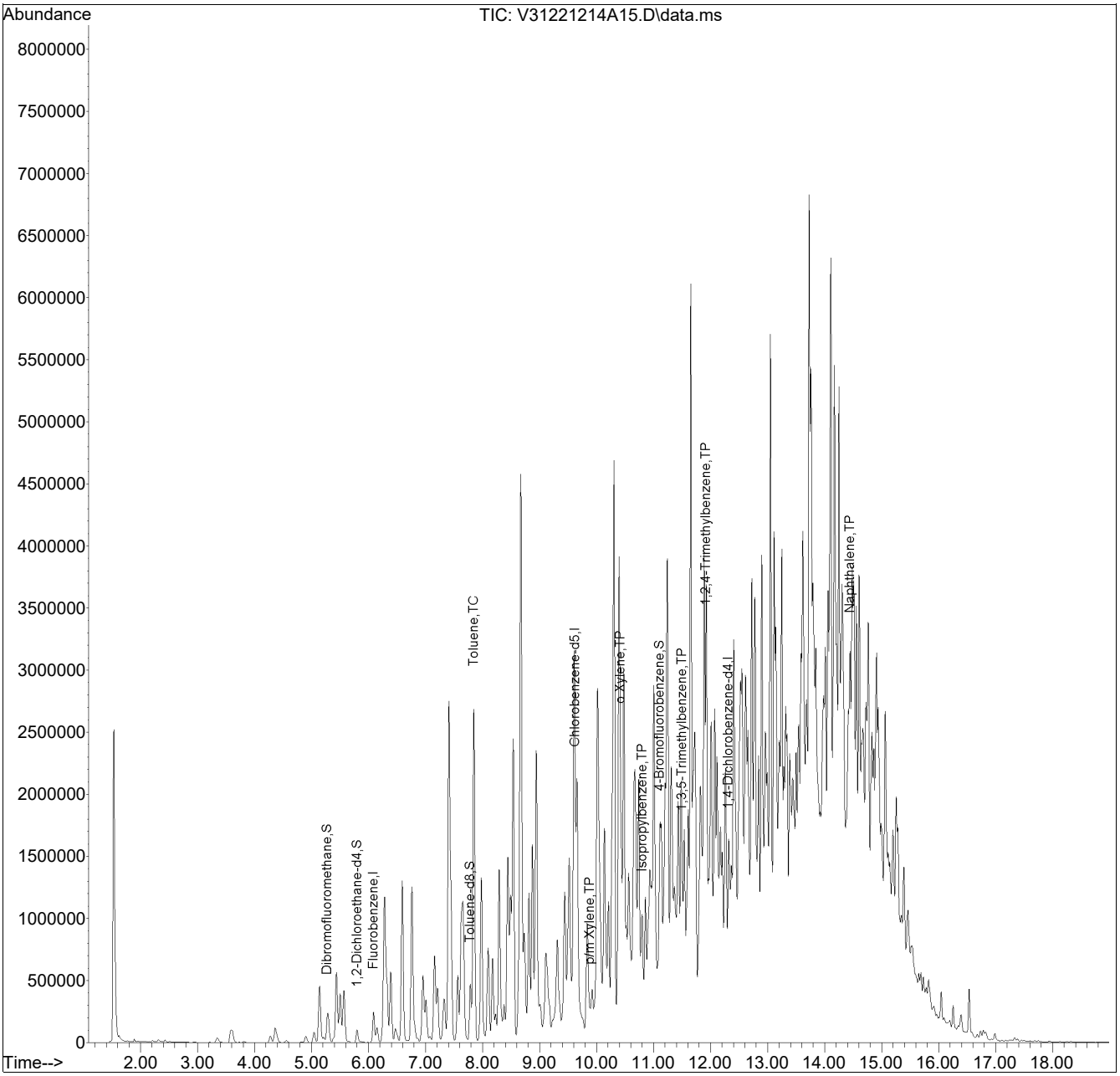


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A15.D
Acq On : 14 Dec 2022 01:17 pm
Operator : VOA131:NLK
Sample : L2269124-09,31,4.71,5,,C,R2F
Misc : WG1723589,ICAL19531
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Dec 14 13:48:55 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

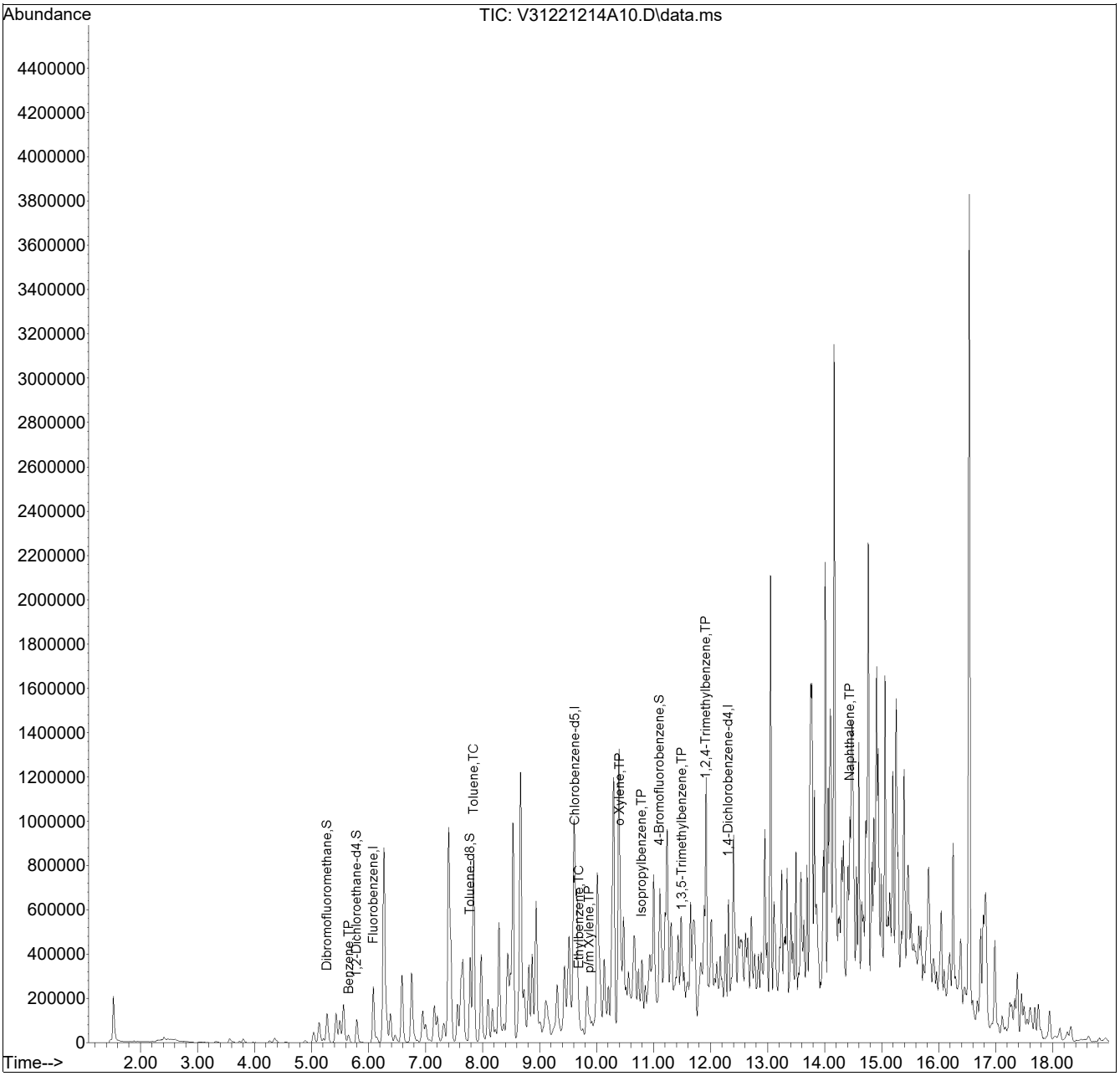


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A10.D
Acq On : 14 Dec 2022 11:22 am
Operator : VOA131:JIC
Sample : L2269124-10,31H,4.40,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 14 13:26:39 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

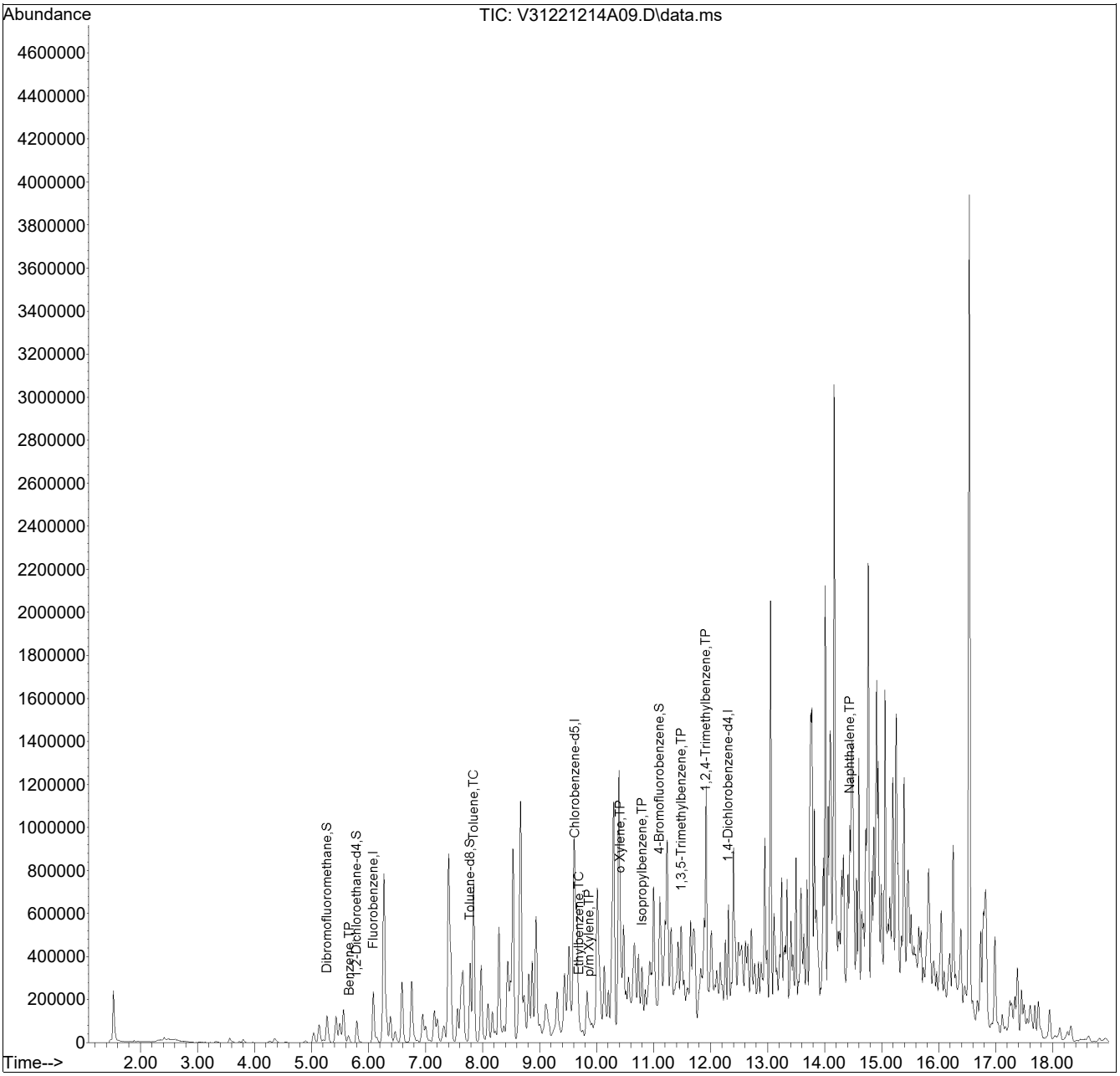


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A09.D
Acq On : 14 Dec 2022 10:59 am
Operator : VOA131:JIC
Sample : L2269124-11,31H,4.47,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 14 13:26:12 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

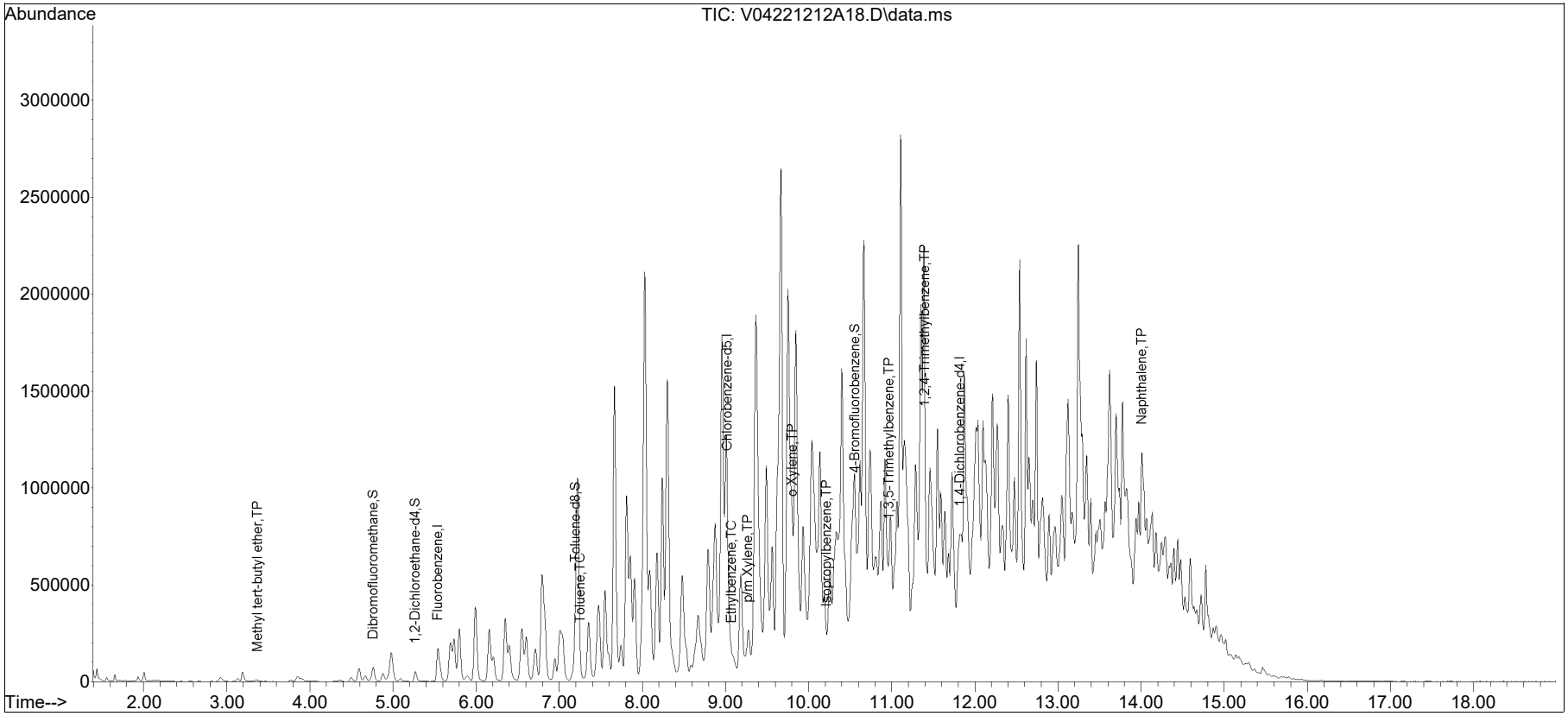


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA104\2022\221212A\
Data File : V04221212A18.D
Acq On : 12 Dec 2022 6:00 pm
Operator : VOA104:NLK
Sample : L2269124-13,31,4.63,5,,B,R2F
Misc : WG1722715,ICAL19471
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 13 11:44:38 2022
Quant Method : I:\VOLATILES\VOA104\2022\221212A\V104_221109N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 10 09:20:34 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V04221212A01.D•

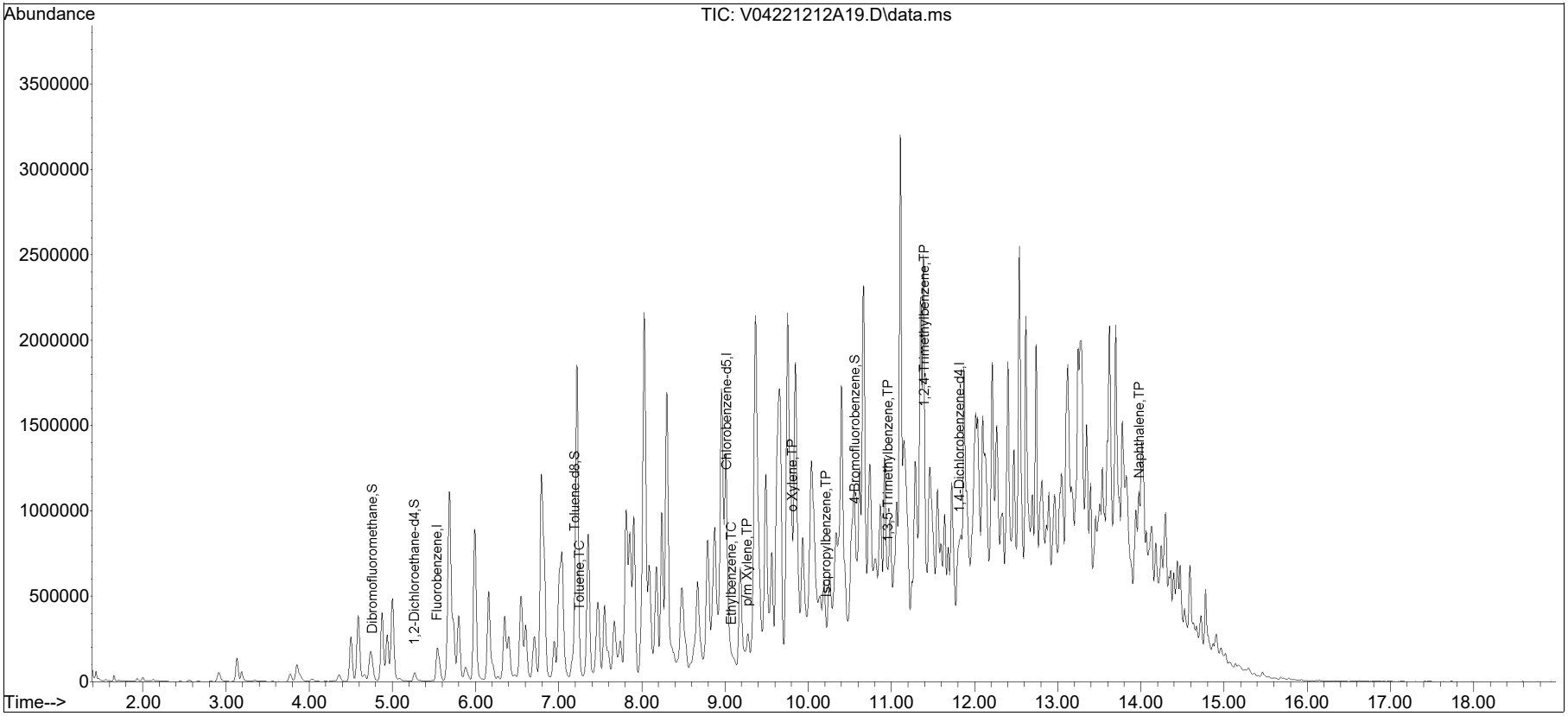


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA104\2022\221212A\
Data File : V04221212A19.D
Acq On : 12 Dec 2022 6:26 pm
Operator : VOA104:NLK
Sample : L2269124-14,31,4.59,5,,B,R2F
Misc : WG1722715,ICAL19471
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Dec 13 11:44:55 2022
Quant Method : I:\VOLATILES\VOA104\2022\221212A\V104_221109N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 10 09:20:34 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list12A\V04221212A01.D•



V104_221109N_8260.m Tue Dec 13 12:02:55 2022 Page: 2

ANALYTICAL REPORT

Lab Number:	L2269475
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	12/16/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269475-01	GPR1101-01-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:00	12/09/22
L2269475-02	GPR1101-02-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:10	12/09/22
L2269475-03	GPR1101-03-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:20	12/09/22
L2269475-04	GPR1101-04-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:30	12/09/22
L2269475-05	GPR1101-05-SS01	SOIL	PHILADELPHIA, PA	12/09/22 10:40	12/09/22
L2269475-06	TB-221209		PHILADELPHIA, PA	12/09/22 00:00	12/09/22
L2269475-07	FB-221209		PHILADELPHIA, PA	12/09/22 11:00	12/09/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2269475-06: A sample identified as "TB-221209" was listed on the Chain of Custody, but not received. This was verified by the client.

L2269475-07: A sample identified as "FB-221209" was listed on the Chain of Custody, but not received. This was verified by the client.

Volatile Organics

L2269475-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (212%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269475-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (149%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2269475-02: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2269475-03: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2269475-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (170%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 12/16/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:54
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	1
Benzene	0.10		mg/kg	0.047	0.015	1
1,2-Dichloroethane	ND		mg/kg	0.093	0.024	1
Toluene	0.27		mg/kg	0.093	0.051	1
1,2-Dibromoethane	ND		mg/kg	0.047	0.027	1
Ethylbenzene	0.055	J	mg/kg	0.093	0.013	1
p/m-Xylene	0.36		mg/kg	0.19	0.052	1
o-Xylene	0.083	J	mg/kg	0.093	0.027	1
Xylenes, Total	0.44	J	mg/kg	0.093	0.027	1
Isopropylbenzene	3.9		mg/kg	0.093	0.010	1
1,3,5-Trimethylbenzene	0.028	J	mg/kg	0.19	0.018	1
1,2,4-Trimethylbenzene	0.40		mg/kg	0.19	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**212**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 19:44
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.15	0.015	1
Benzene	0.080		mg/kg	0.037	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.074	0.019	1
Toluene	0.20		mg/kg	0.074	0.040	1
1,2-Dibromoethane	ND		mg/kg	0.037	0.022	1
Ethylbenzene	0.16		mg/kg	0.074	0.010	1
p/m-Xylene	0.64		mg/kg	0.15	0.041	1
o-Xylene	0.12		mg/kg	0.074	0.021	1
Xylenes, Total	0.76		mg/kg	0.074	0.021	1
Isopropylbenzene	0.39		mg/kg	0.074	0.0080	1
1,3,5-Trimethylbenzene	0.064	J	mg/kg	0.15	0.014	1
1,2,4-Trimethylbenzene	0.30		mg/kg	0.15	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 13:40
Analyst: AJK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00030	1
Benzene	0.00043	J	mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.0012	J	mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	0.00082	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	0.010		mg/kg	0.0029	0.00082	1
o-Xylene	0.0039		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.014		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.045		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00082	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0037		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**149**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:31
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.20	0.020	1
Benzene	0.022	J	mg/kg	0.050	0.016	1
1,2-Dichloroethane	ND		mg/kg	0.10	0.026	1
Toluene	0.30		mg/kg	0.10	0.054	1
1,2-Dibromoethane	ND		mg/kg	0.050	0.029	1
Ethylbenzene	0.047	J	mg/kg	0.10	0.014	1
p/m-Xylene	0.075	J	mg/kg	0.20	0.056	1
o-Xylene	0.066	J	mg/kg	0.10	0.029	1
Xylenes, Total	0.14	J	mg/kg	0.10	0.029	1
Isopropylbenzene	1.1		mg/kg	0.10	0.011	1
1,3,5-Trimethylbenzene	0.13	J	mg/kg	0.20	0.019	1
1,2,4-Trimethylbenzene	0.70		mg/kg	0.20	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**170**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D2
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 14:03
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	51.		mg/kg	1.6	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/22 20:36
Analyst: NLK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.31	0.031	2
Benzene	0.23		mg/kg	0.078	0.026	2
1,2-Dichloroethane	ND		mg/kg	0.16	0.040	2
Toluene	0.29		mg/kg	0.16	0.085	2
1,2-Dibromoethane	ND		mg/kg	0.078	0.046	2
Ethylbenzene	0.30		mg/kg	0.16	0.022	2
p/m-Xylene	1.6		mg/kg	0.31	0.087	2
o-Xylene	1.1		mg/kg	0.16	0.045	2
Xylenes, Total	2.7		mg/kg	0.16	0.045	2
Isopropylbenzene	1.9		mg/kg	0.16	0.017	2
1,3,5-Trimethylbenzene	21.		mg/kg	0.31	0.030	2
1,2,4-Trimethylbenzene	48.	E	mg/kg	0.31	0.052	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	79		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/14/22 12:08
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0012	J	mg/kg	0.0024	0.00067	1
o-Xylene	0.00097	J	mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0022	J	mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0065		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0020	J	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/22 12:22
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,04 Batch: WG1722718-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**136**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01,03-04 Batch: WG1723588-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/14/22 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,05 Batch: WG1723589-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,04 Batch: WG1722718-3 WG1722718-4								
Methyl tert butyl ether	89		87		66-130	2		30
Benzene	92		93		70-130	1		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	93		95		70-130	2		30
1,2-Dibromoethane	90		88		70-130	2		30
Ethylbenzene	95		97		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	100		103		70-130	3		30
Isopropylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1723588-3 WG1723588-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	96		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,05 Batch: WG1723589-3 WG1723589-4								
Methyl tert butyl ether	87		92		66-130	6		30
Benzene	88		90		70-130	2		30
1,2-Dichloroethane	83		87		70-130	5		30
Toluene	89		91		70-130	2		30
1,2-Dibromoethane	82		84		70-130	2		30
Ethylbenzene	90		91		70-130	1		30
p/m-Xylene	88		91		70-130	3		30
o-Xylene	86		89		70-130	3		30
Isopropylbenzene	94		92		70-130	2		30
1,3,5-Trimethylbenzene	94		91		70-130	3		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	109		108		70-130
4-Bromofluorobenzene	110		108		70-130
Dibromofluoromethane	95		96		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:51
Analyst: SLR
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.24	0.029	1
Fluorene	3.2		mg/kg	0.24	0.023	1
Phenanthrene	10.	E	mg/kg	0.14	0.029	1
Anthracene	1.4		mg/kg	0.14	0.046	1
Pyrene	1.4		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.50		mg/kg	0.14	0.027	1
Chrysene	0.57		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.38		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.30		mg/kg	0.19	0.058	1
Indeno(1,2,3-cd)pyrene	0.23		mg/kg	0.19	0.033	1
Benzo(ghi)perylene	0.25		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**231**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01 D
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 08:28
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	12.		mg/kg	0.28	0.058	2

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:27
Analyst: SLR
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.22		mg/kg	0.20	0.025	1
Fluorene	0.12	J	mg/kg	0.20	0.020	1
Phenanthrene	0.33		mg/kg	0.12	0.025	1
Anthracene	0.21		mg/kg	0.12	0.040	1
Pyrene	0.48		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.066	J	mg/kg	0.12	0.023	1
Chrysene	0.20		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.11	J	mg/kg	0.12	0.035	1
Benzo(a)pyrene	0.11	J	mg/kg	0.16	0.050	1
Indeno(1,2,3-cd)pyrene	0.086	J	mg/kg	0.16	0.029	1
Benzo(ghi)perylene	0.18		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	45		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 19:03
Analyst: SLR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.37		mg/kg	0.22	0.027	1
Fluorene	0.53		mg/kg	0.22	0.022	1
Phenanthrene	1.2		mg/kg	0.13	0.027	1
Anthracene	0.22		mg/kg	0.13	0.044	1
Pyrene	0.32		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.16		mg/kg	0.13	0.025	1
Chrysene	0.18		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	0.17		mg/kg	0.13	0.038	1
Benzo(a)pyrene	0.14	J	mg/kg	0.18	0.055	1
Indeno(1,2,3-cd)pyrene	0.12	J	mg/kg	0.18	0.031	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**126**	Q	23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D2
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 12:34
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	40.		mg/kg	3.0	0.62	25

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04 D
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/16/22 08:52
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	1.0	0.12	5
Fluorene	17.		mg/kg	1.0	0.098	5
Phenanthrene	46.	E	mg/kg	0.61	0.12	5
Anthracene	6.9		mg/kg	0.61	0.20	5
Pyrene	8.3		mg/kg	0.61	0.10	5
Benzo(a)anthracene	1.3		mg/kg	0.61	0.11	5
Chrysene	2.7		mg/kg	0.61	0.10	5
Benzo(b)fluoranthene	0.67		mg/kg	0.61	0.17	5
Benzo(a)pyrene	0.60	J	mg/kg	0.81	0.25	5
Indeno(1,2,3-cd)pyrene	0.26	J	mg/kg	0.81	0.14	5
Benzo(ghi)perylene	0.50	J	mg/kg	0.81	0.12	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	38		30-120
4-Terphenyl-d14	35		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/11/22 18:15
Analyst: SLR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/10/22 23:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.098	J	mg/kg	0.20	0.024	1
Fluorene	0.081	J	mg/kg	0.20	0.019	1
Phenanthrene	0.30		mg/kg	0.12	0.024	1
Anthracene	0.24		mg/kg	0.12	0.039	1
Pyrene	0.80		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.15		mg/kg	0.12	0.022	1
Chrysene	0.34		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.18		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.20		mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	0.13	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.32		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/11/22 09:26
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 12/10/22 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1721610-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	91		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1721610-2 WG1721610-3								
Naphthalene	82		76		40-140	8		50
Fluorene	86		80		40-140	7		50
Phenanthrene	78		75		40-140	4		50
Anthracene	82		77		40-140	6		50
Pyrene	87		83		35-142	5		50
Benzo(a)anthracene	85		80		40-140	6		50
Chrysene	83		79		40-140	5		50
Benzo(b)fluoranthene	92		86		40-140	7		50
Benzo(a)pyrene	93		86		40-140	8		50
Indeno(1,2,3-cd)pyrene	99		93		40-140	6		50
Benzo(ghi)perylene	86		81		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	**131**	Q	117		23-120
2-Fluorobiphenyl	98		90		30-120
4-Terphenyl-d14	90		87		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	379		mg/kg	2.77	0.148	1	12/12/22 21:10	12/13/22 16:12	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	380		mg/kg	2.44	0.131	1	12/12/22 21:10	12/13/22 16:17	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	396		mg/kg	2.56	0.137	1	12/12/22 21:10	12/13/22 16:22	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2269475
Project Number: 200.00135.006
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	99.4		mg/kg	2.42	0.130	1	12/12/22 21:10	12/13/22 16:27	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	169		mg/kg	2.32	0.124	1	12/12/22 21:10	12/13/22 16:32	EPA 3050B	1,6010D	GCL

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1721903-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/12/22 21:10	12/13/22 13:50	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1721903-2 SRM Lot Number: D116-540								
Lead, Total	89		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1721903-3 QC Sample: L2269449-01 Client ID: MS Sample												
Lead, Total	1.99J	42.2	41.2	98		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1721903-4 QC Sample: L2269449-01 Client ID: DUP Sample						
Lead, Total	1.99J	3.41J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-01
Client ID: GPR1101-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:00
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-02
Client ID: GPR1101-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/09/22 10:10
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.6		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-03
Client ID: GPR1101-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:20
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.4		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-04
Client ID: GPR1101-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/09/22 10:30
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2269475
Report Date: 12/16/22

SAMPLE RESULTS

Lab ID: L2269475-05
Client ID: GPR1101-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/09/22 10:40
Date Received: 12/09/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	12/12/22 17:15	121,2540G	RM

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2269475

Report Date: 12/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1722355-1 QC Sample: L2268495-01 Client ID: DUP Sample						
Solids, Total	90.8	84.1	%	8		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269475-01A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-01B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-01C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-01E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-01F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-02A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2269475-02B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260H(14),PA-8260HLW(14)
L2269475-02C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260H(14),PA-8260HLW(14)
L2269475-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-02E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-02F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-03A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-03B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-03C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-03E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-03F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-04A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-04B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-04C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-04E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2269475
Report Date: 12/16/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269475-04F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2269475-05A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2269475-05B	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-05C	Vial water preserved	A	NA		2.4	Y	Absent	10-DEC-22 06:16	PA-8260HLW(14)
L2269475-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2269475-05E	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2269475-05F	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2269475
Project Number:	200.00135.006	**Report Date:**	12/16/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/9/22

ALPHA Job #: L2269475

ALPHA ANALYTICAL — Customer Driven Science

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	Lead	SHORTLIST 1-6	Sample Specific Comments	TOTAL # BOTTLES
19475-01	GPR1101-01-5501	12/9	1000	S	TS	☒	☒	☒	☒		4
-02	GPR1101-02-5501		1040	S		☐	☒	☒	☒		2
-03	GPR1101-03-5501		1020	S		☐	☒	☒	☒		4
-04	GPR1101-04-5501		1030	S		☐	☒	☐	☒		2
-05	GPR1101-05-5501		1040	S		☐	☒	☒	☒		4
-06	TB-221209		-	W		☒	☐	☐	☐		2
-07	FB-221209		1100	W		☒	☒	☒	☒		4
						☐	☐	☐	☐		2
						☐	☐	☐	☐		4
						☐	☐	☐	☐		2

Container Type	G	G	G	-	-	-	-	-	-	-	-
Preservative	F	A	A	-	-	-	-	-	-	-	-

EMAIL 12/10/22 0140 — 12/10/22 0140

Relinquished By:	Date/Time	Received By:	Date/Time
	12/9 1508	AAL	12/9/22 1508
AAL	12/9/22 1800		12/9 1800
DMG	12.9 2100		12.9.22 2100

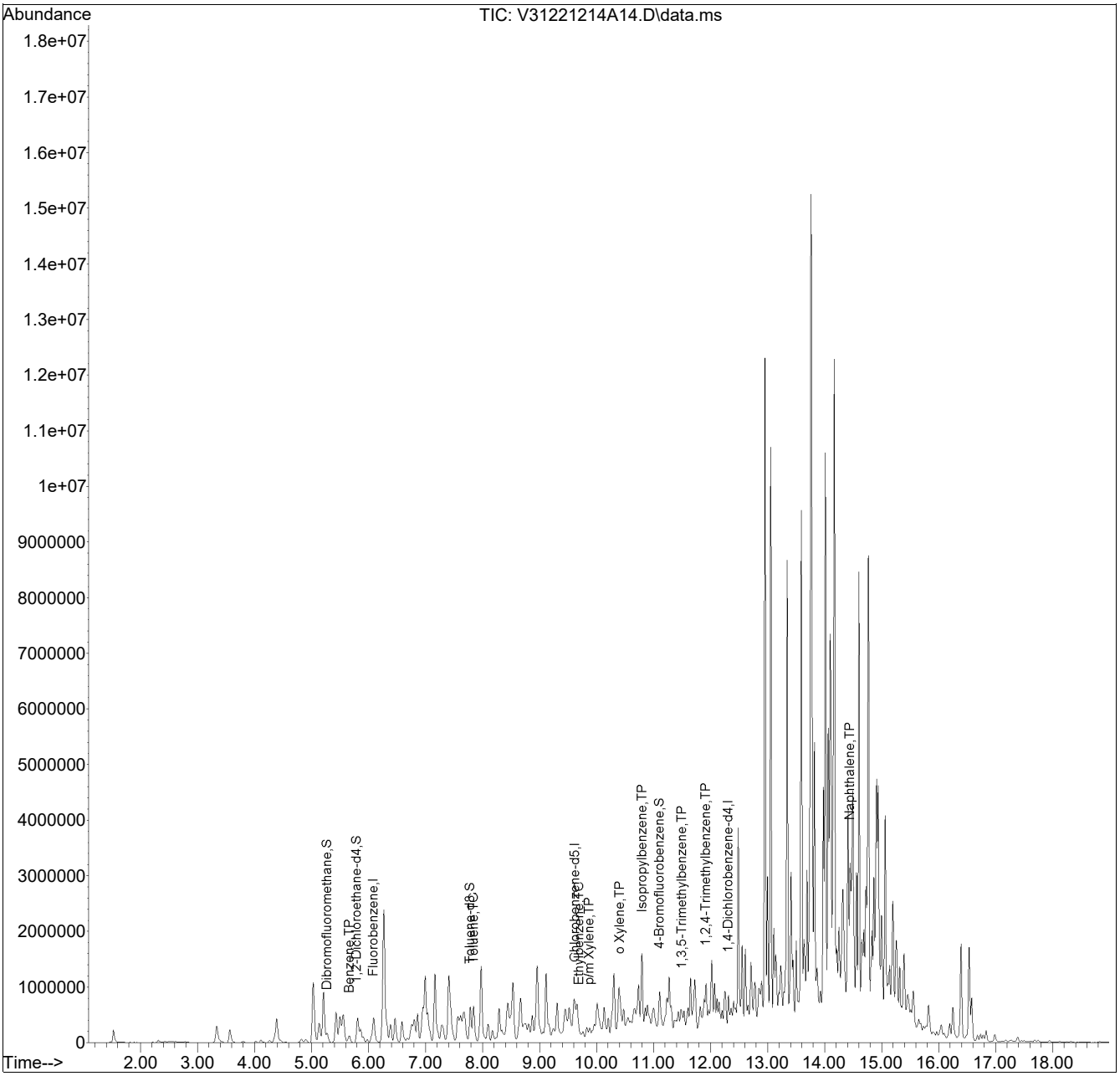
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A14.D
Acq On : 14 Dec 2022 12:54 pm
Operator : VOA131:JIC
Sample : L2269475-01,31H,4.99,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 14 13:48:04 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

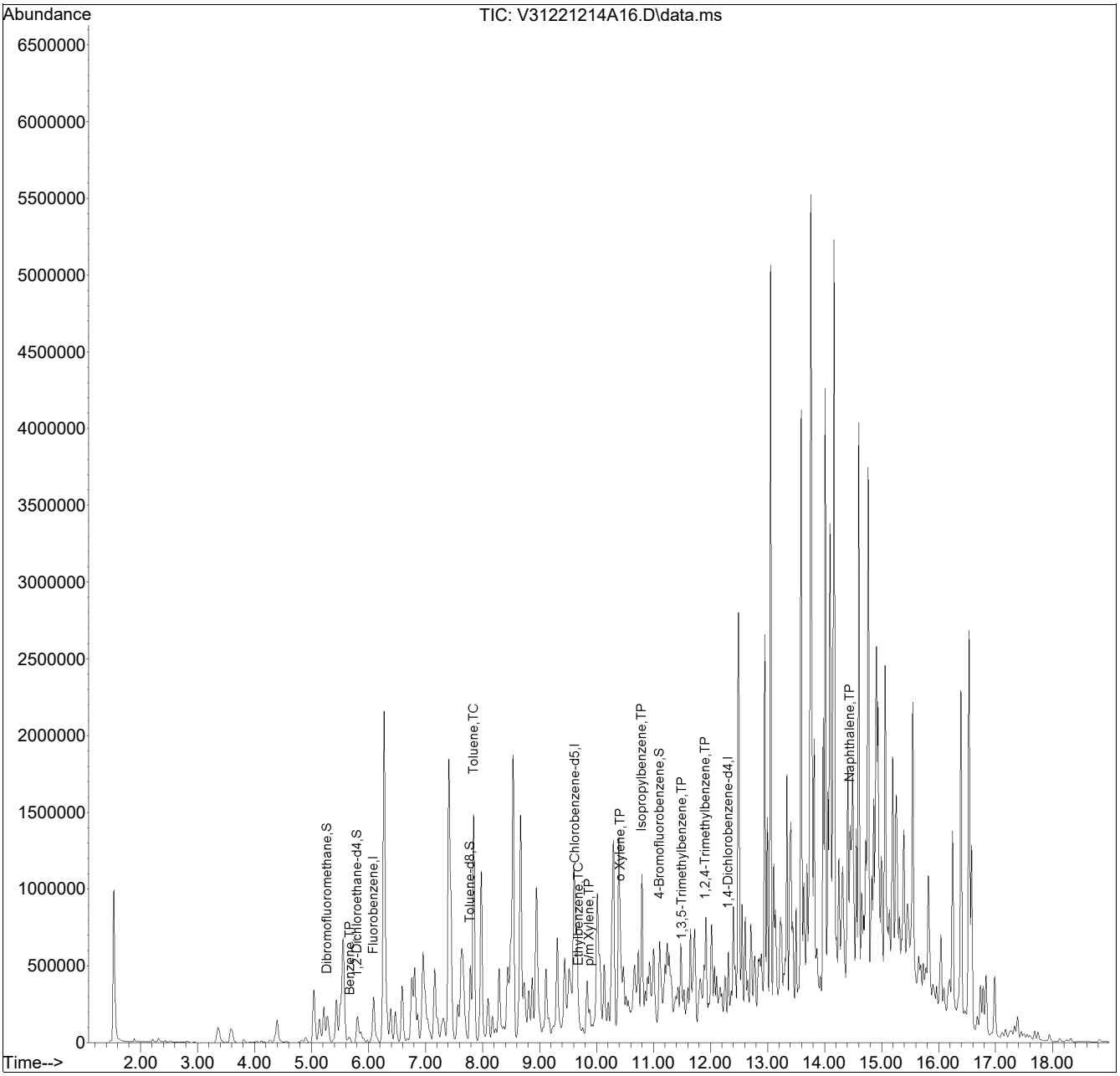


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A16.D
Acq On : 14 Dec 2022 01:40 pm
Operator : VOA131:AJK
Sample : L2269475-02,31,4.27,5,,C,R2F
Misc : WG1723589,ICAL19531
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 14 23:30:36 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•

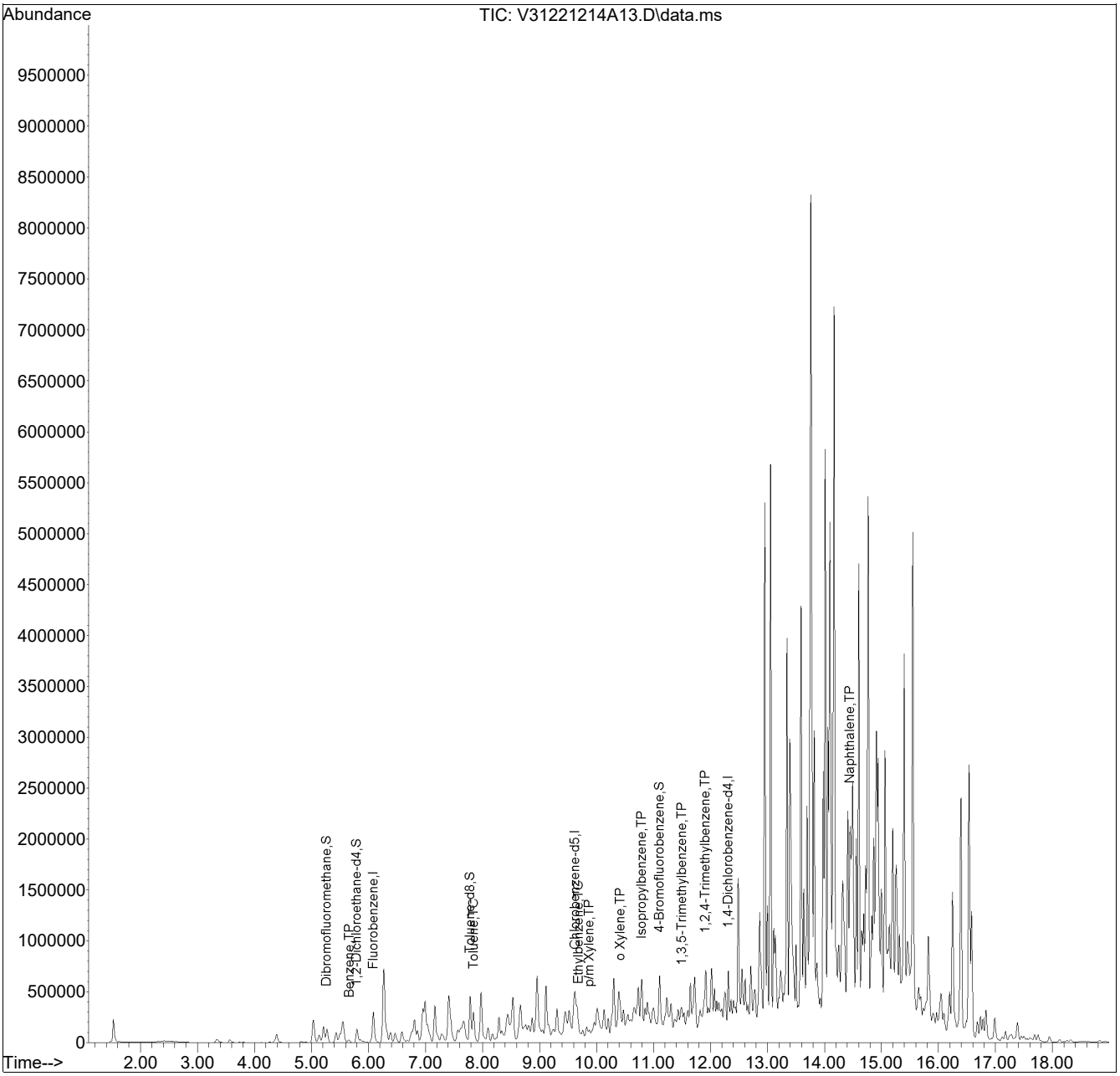


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA131\2022\221214A\
Data File : V31221214A13.D
Acq On : 14 Dec 2022 12:31 pm
Operator : VOA131:JIC
Sample : L2269475-03,31H,4.18,5,0.100,,A,R2F
Misc : WG1723588,ICAL19531
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 14 13:28:01 2022
Quant Method : I:\VOLATILES\VOA131\2022\221214A\V31_221128A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 29 14:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list14A\V31221214A01.D•



ANALYTICAL REPORT

Lab Number:	L2334089
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	260.00135.014.03
Report Date:	06/22/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03

Lab Number: L2334089
Report Date: 06/22/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2334089-01	GPR1038-04-SS01	SOIL	PHILADELPHIA, PA	06/15/23 08:55	06/15/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The Client ID and the analyses performed were specified by the client.

Volatile Organics

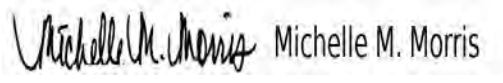
L2334089-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (227%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

PAHs

L2334089-01D: The sample has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the analytical dilution required by the sample matrix.

L2334089-01D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 06/22/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334089
Project Number: 260.00135.014.03
Report Date: 06/22/23

SAMPLE RESULTS

Lab ID: L2334089-01
Client ID: GPR1038-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 06/15/23 08:55
Date Received: 06/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/22/23 05:47
Analyst: JIC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.016	1
Benzene	0.040	J	mg/kg	0.041	0.014	1
1,2-Dichloroethane	ND		mg/kg	0.082	0.021	1
Toluene	0.44		mg/kg	0.082	0.045	1
1,2-Dibromoethane	ND		mg/kg	0.041	0.024	1
Ethylbenzene	1.0		mg/kg	0.082	0.012	1
p/m-Xylene	14.		mg/kg	0.16	0.046	1
o-Xylene	6.0		mg/kg	0.082	0.024	1
Xylenes, Total	20.		mg/kg	0.082	0.024	1
Isopropylbenzene	1.4		mg/kg	0.082	0.0090	1
1,3,5-Trimethylbenzene	17.		mg/kg	0.16	0.016	1
1,2,4-Trimethylbenzene	24.		mg/kg	0.16	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	129		70-130
4-Bromofluorobenzene	**227**	Q	70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03
Lab Number: L2334089
Report Date: 06/22/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/21/23 22:50
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1794810-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 260.00135.014.03

Lab Number: L2334089

Report Date: 06/22/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1794810-3 WG1794810-4								
Methyl tert butyl ether	91		88		66-130	3		30
Benzene	79		77		70-130	3		30
1,2-Dichloroethane	104		101		70-130	3		30
Toluene	76		74		70-130	3		30
1,2-Dibromoethane	82		80		70-130	2		30
Ethylbenzene	80		78		70-130	3		30
p/m-Xylene	84		82		70-130	2		30
o-Xylene	86		84		70-130	2		30
Isopropylbenzene	77		76		70-130	1		30
1,3,5-Trimethylbenzene	79		78		70-130	1		30
1,2,4-Trimethylbenzene	79		77		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	120		116		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	91		92		70-130
Dibromofluoromethane	108		107		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334089
Project Number: 260.00135.014.03
Report Date: 06/22/23

SAMPLE RESULTS

Lab ID: L2334089-01 D
Client ID: GPR1038-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 06/15/23 08:55
Date Received: 06/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/22/23 12:31
Analyst: IM
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/17/23 18:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	150		mg/kg	2.0	1.2	50
Fluorene	11.		mg/kg	9.8	0.95	50
Phenanthrene	24.		mg/kg	5.9	1.2	50
Anthracene	4.1	J	mg/kg	5.9	1.9	50
Pyrene	4.9	J	mg/kg	5.9	0.97	50
Benzo(a)anthracene	1.3	J	mg/kg	5.9	1.1	50
Chrysene	1.7	J	mg/kg	5.9	1.0	50
Benzo(b)fluoranthene	ND		mg/kg	5.9	1.6	50
Benzo(a)pyrene	ND		mg/kg	7.8	2.4	50
Benzo(ghi)perylene	ND		mg/kg	7.8	1.1	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03
Lab Number: L2334089
Report Date: 06/22/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/19/23 20:22
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/17/23 18:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1792772-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	75		10-136
4-Terphenyl-d14	69		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 260.00135.014.03

Lab Number: L2334089

Report Date: 06/22/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1792772-2 WG1792772-3								
Naphthalene	57		64		40-140	12		50
Fluorene	58		79		40-140	31		50
Phenanthrene	57		65		40-140	13		50
Anthracene	57		68		40-140	18		50
Pyrene	56		77		35-142	32		50
Benzo(a)anthracene	59		68		40-140	14		50
Chrysene	56		64		40-140	13		50
Benzo(b)fluoranthene	58		68		40-140	16		50
Benzo(a)pyrene	60		69		40-140	14		50
Benzo(ghi)perylene	57		66		40-140	15		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		73		25-120
Phenol-d6	65		70		10-120
Nitrobenzene-d5	65		69		23-120
2-Fluorobiphenyl	55		64		30-120
2,4,6-Tribromophenol	71		82		10-136
4-Terphenyl-d14	52		69		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334089
Project Number: 260.00135.014.03
Report Date: 06/22/23

SAMPLE RESULTS

Lab ID: L2334089-01
Client ID: GPR1038-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 06/15/23 08:55
Date Received: 06/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	427		mg/kg	2.33	0.125	1	06/19/23 12:42	06/21/23 09:33	EPA 3050B	1,6010D	DHL

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03
Lab Number: L2334089
Report Date: 06/22/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1792660-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	06/19/23 12:42	06/19/23 21:57	1,6010D	DHL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 260.00135.014.03

Lab Number: L2334089

Report Date: 06/22/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1792660-2 SRM Lot Number: D119-540								
Lead, Total	102		-		82-118	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03

Lab Number: L2334089
Report Date: 06/22/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1792660-3 WG1792660-4 QC Sample: L2334208-11 Client ID: MS Sample												
Lead, Total	42.9	46.3	88.7	99		92.3	105		75-125	4		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1792660-7 WG1792660-8 QC Sample: L2334208-12 Client ID: MS Sample												
Lead, Total	8.50	45.1	52.1	97		51.9	95		75-125	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03

Lab Number: L2334089
Report Date: 06/22/23

SAMPLE RESULTS

Lab ID: L2334089-01
Client ID: GPR1038-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 06/15/23 08:55
Date Received: 06/15/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.5		%	0.100	NA	1	-	06/16/23 13:23	121,2540G	ROI
pH (H)	7.73		SU	-	NA	1	-	06/20/23 20:34	1,9045D	AAS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 260.00135.014.03

Lab Number: L2334089

Report Date: 06/22/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1793917-1								
pH	99		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 260.00135.014.03

Lab Number: L2334089

Report Date: 06/22/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1792199-2 QC Sample: L2334277-01 Client ID: DUP Sample						
Solids, Total	88.2	88.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1793917-2 QC Sample: L2331830-01 Client ID: DUP Sample						
pH	7.02	7.06	SU	1		5

Project Name: PHILADELPHIA REFINERY
Project Number: 260.00135.014.03

Lab Number: L2334089
Report Date: 06/22/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2334089-01A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334089-01B	Vial water preserved	A	NA		3.4	Y	Absent	16-JUN-23 13:07	PA-8260HLW(14)
L2334089-01C	Vial water preserved	A	NA		3.4	Y	Absent	16-JUN-23 13:07	PA-8260HLW(14)
L2334089-01D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334089-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2334089-01F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334089
Project Number:	260.00135.014.03	**Report Date:**	06/22/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 6/15/23

ALPHA Job #: L2334089

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue, Hamilton NJ 08619
Phone: 215-901-4904
Fax:
Email: william.schmidt@ransom-env.com

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135.014.03
(Use Project name as Project #) ☐
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED: ☐ Category 1 ☐ Category 2

For VOC, selection is REQUIRED: ☐ 1,4-Dioxane ☐ 8011

Other project specific requirements/comments: Report only project-at specific target list at PADEP landed/unleaded gasoline & No. 2, 4, 5, & 6 fuel oil shortlist. Run as petroleum using

Please specify Metals or TAL. Method 8270D ONLY!

email results to add@transpacenv.com, william.schmidt@ransom-env.com, JJ.cruz@hilcoglobal.com

Deliverables

☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☐ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP Specific List (8270D)	Site-specific VOCs (8260C)	Site-specific SVOCs (8270C)	pH (9045D)	Total Bottle
34089-01	GPR1038-04	6/15/23	8:55	S	ND	X	X	X	X	

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	G	G	G							
Preservative	F	F	F							

Relinquished By:	Date/Time	Received By:	Date/Time
	6/15/23 13:05		6/15/23 1310
	6/15/23 1405		6/15/23 14:15
	6/15/23		6/15/23 22:00
	6/15/23 23:50		6/15/23 2350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

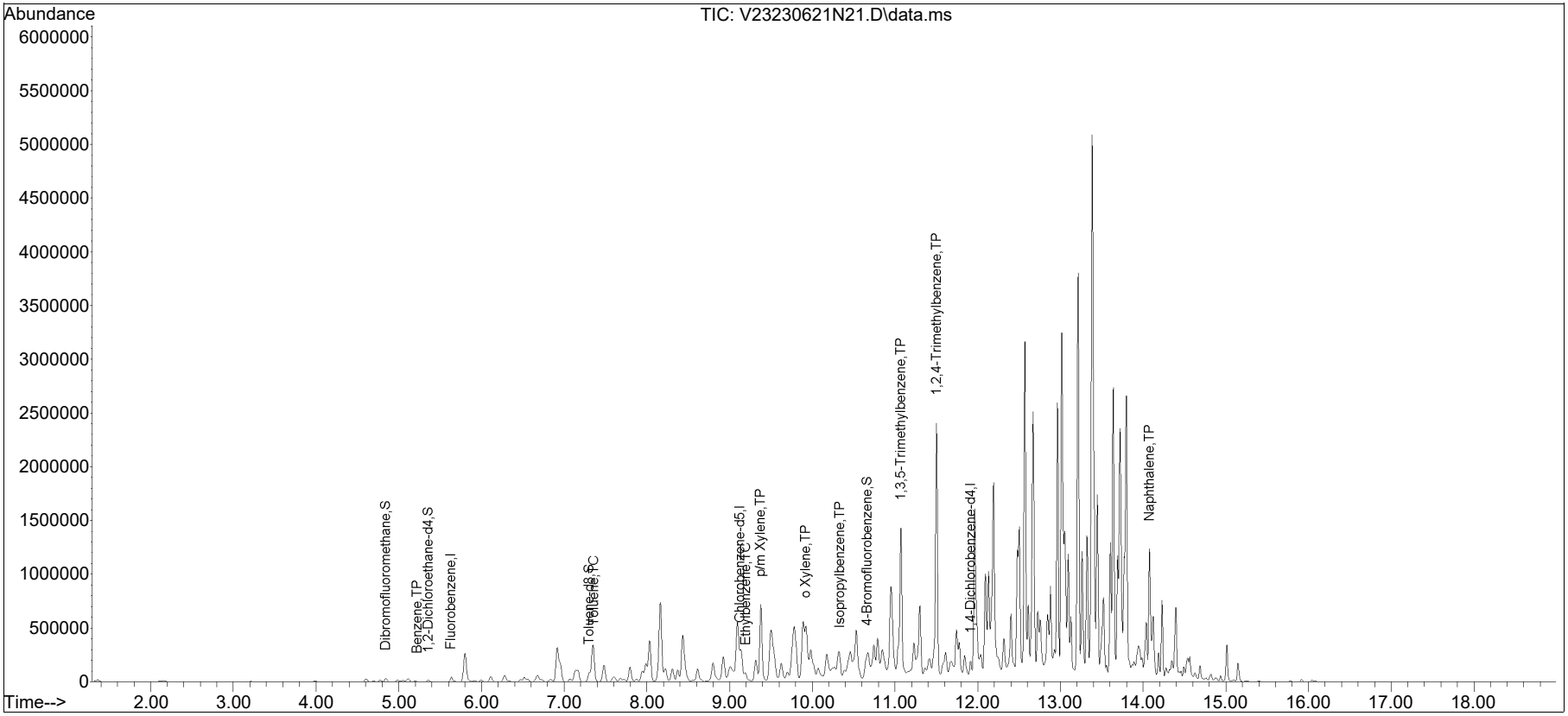
Form No: 01-14 HC (rev. 30-Sept-2013)

Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2023\230621N\
Data File : V23230621N21.D
Acq On : 22 Jun 2023 05:47 am
Operator : VOA123:JIC
Sample : L2334089-01,31H,4.03,5,0.100,,A,R3E
Misc : WG1794810,ICAL20024
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 22 06:59:05 2023
Quant Method : K:\VOA123\2023\230621N\V123_230518A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue May 23 09:22:30 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list621N01.D•



ANALYTICAL REPORT

Lab Number:	L2334803
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.014.03
Report Date:	07/13/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2334803-01	GPR1038-01-SS01	SOIL	PHILADELPHIA PA	06/16/23 08:55	06/16/23
L2334803-02	GPR1038-02-SS01	SOIL	PHILADELPHIA PA	06/16/23 08:35	06/16/23
L2334803-03	GPR1038-03-SS01	SOIL	PHILADELPHIA PA	06/16/23 08:30	06/16/23
L2334803-04	GPR1038-05-SS01	SOIL	PHILADELPHIA PA	06/16/23 08:40	06/16/23
L2334803-05	GPR1039-01-SS01	SOIL	PHILADELPHIA PA	06/16/23 10:05	06/16/23
L2334803-06	GPR1039-02-SS01	SOIL	PHILADELPHIA PA	06/16/23 09:30	06/16/23
L2334803-07	GPR1039-03-SS01	SOIL	PHILADELPHIA PA	06/16/23 09:40	06/16/23
L2334803-08	GPR1039-04-SS01	SOIL	PHILADELPHIA PA	06/16/23 09:50	06/16/23
L2334803-09	GPR1039-05-SS01	SOIL	PHILADELPHIA PA	06/16/23 09:20	06/16/23
L2334803-10	GPR272-06-SS01	SOIL	PHILADELPHIA PA	06/16/23 14:00	06/16/23
L2334803-11	GPR272-07-SS01	SOIL	PHILADELPHIA PA	06/16/23 13:20	06/16/23
L2334803-12	GPR272-10-SS01	SOIL	PHILADELPHIA PA	06/16/23 14:05	06/16/23
L2334803-13	GPR272-11-SS01	SOIL	PHILADELPHIA PA	06/16/23 14:00	06/16/23
L2334803-14	FB061623	WATER	PHILADELPHIA PA	06/16/23 13:14	06/16/23
L2334803-15	DUP55	SOIL	PHILADELPHIA PA	06/16/23 00:00	06/16/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

Case Narrative (continued)

Report Revision

July 13, 2023: Total Lead is now reported on samples L2334803-01 through -04.

June 27, 2023: The Microextractables analyte list has been amended on L2334803-14 and the Client IDs for L2334803-10 through -13 have been updated.

Report Submission

June 26, 2023: This final report includes the results of all requested analyses.

June 23, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2334803-01 through -14: The Client IDs were changed at the client's request.

L2334803-14: Sample containers for PAHs and Total Metals were received for the "FB061623" sample, but were not listed on the chain of custody. At the client's request, the analyses were performed.

L2334803-15: Sample container for PAHs and Total Metals were received for the "DUP55" sample, but were not listed on the chain of custody. At the client's request, the analyses were performed.

Volatile Organics

L2334803-01: The surrogate recovery is outside the acceptance criteria for toluene-d8 (136%) and 4-bromofluorobenzene (377%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2334803-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (283%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2334803-04: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

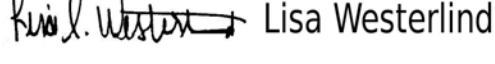
Case Narrative (continued)

due to the elevated concentrations of non-target compounds in the sample.
L2334803-04: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (151%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2334803-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (512%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables
The WG1795302-2 LCS recovery for 1,2-dibromoethane (125%), associated with L2334803-14, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM
L2334803-02D, -04D, -05D, -06D, -08D, and -09D: The sample has elevated detection limits due to the dilution required by the sample matrix.
The WG1794557-1 Method Blank, associated with L2334803-14, has a concentration above the reporting limit for Naphthalene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Lisa Westerlind

Title: Technical Director/Representative Date: 07/13/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-01
Client ID: GPR1038-01-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:55
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 02:52
Analyst: MKS
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	0.0084		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.022		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00039	1
Ethylbenzene	0.010		mg/kg	0.0013	0.00019	1
p/m-Xylene	0.077		mg/kg	0.0027	0.00074	1
o-Xylene	0.087		mg/kg	0.0013	0.00039	1
Xylenes, Total	0.16		mg/kg	0.0013	0.00039	1
Isopropylbenzene	0.026		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.016		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	0.078		mg/kg	0.0027	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	**136**	Q	70-130
4-Bromofluorobenzene	**377**	Q	70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-02
Client ID: GPR1038-02-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:35
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 03:18
Analyst: MKS
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00068	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0012	0.00018	1
p/m-Xylene	0.0012	J	mg/kg	0.0025	0.00070	1
o-Xylene	0.0013		mg/kg	0.0012	0.00036	1
Xylenes, Total	0.0025	J	mg/kg	0.0012	0.00036	1
Isopropylbenzene	0.026		mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	0.00072	J	mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.0016	J	mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	119		70-130
4-Bromofluorobenzene	**283**	Q	70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-03
Client ID: GPR1038-03-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/22/23 22:32
Analyst: MKS
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00068	1
o-Xylene	ND		mg/kg	0.0012	0.00035	1
Xylenes, Total	ND		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.00034	J	mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.00025	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.00059	J	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-04
Client ID: GPR1038-05-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:40
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 04:10
Analyst: MKS
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	1
Benzene	0.14		mg/kg	0.047	0.016	1
1,2-Dichloroethane	ND		mg/kg	0.094	0.024	1
Toluene	0.23		mg/kg	0.094	0.051	1
1,2-Dibromoethane	ND		mg/kg	0.047	0.028	1
Ethylbenzene	0.091	J	mg/kg	0.094	0.013	1
p/m-Xylene	0.31		mg/kg	0.19	0.053	1
o-Xylene	0.062	J	mg/kg	0.094	0.027	1
Xylenes, Total	0.37	J	mg/kg	0.094	0.027	1
Isopropylbenzene	1.7		mg/kg	0.094	0.010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.19	0.018	1
1,2,4-Trimethylbenzene	0.11	J	mg/kg	0.19	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**151**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-05
Client ID: GPR1039-01-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 10:05
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/22/23 22:58
Analyst: MKS
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.0018		mg/kg	0.00067	0.00022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-06
Client ID: GPR1039-02-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/22/23 23:24
Analyst: MKS
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00088	J	mg/kg	0.00094	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-07
Client ID: GPR1039-03-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:40
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/22/23 23:50
Analyst: MKS
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00058	0.00019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-08
Client ID: GPR1039-04-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:50
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 00:16
Analyst: MKS
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00063	0.00021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-09
Client ID: GPR1039-05-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:20
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 00:42
Analyst: MKS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00079	0.00026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	128		70-130
4-Bromofluorobenzene	**512**	Q	70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-10
Client ID: GPR272-06-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 01:08
Analyst: MKS
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00027	1
Benzene	ND		mg/kg	0.00068	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00035	1
Toluene	ND		mg/kg	0.0014	0.00073	1
1,2-Dibromoethane	ND		mg/kg	0.00068	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00076	1
o-Xylene	ND		mg/kg	0.0014	0.00039	1
Xylenes, Total	ND		mg/kg	0.0014	0.00039	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-11
Client ID: GPR272-07-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:20
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 01:34
Analyst: MKS
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00086	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00093	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00050	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0034	0.00096	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	ND		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0034	0.00057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-12
Client ID: GPR272-10-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 14:05
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 02:00
Analyst: MKS
Percent Solids: 61%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00085	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00087	1
o-Xylene	ND		mg/kg	0.0016	0.00045	1
Xylenes, Total	ND		mg/kg	0.0016	0.00045	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**135**	Q	70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-13
Client ID: GPR272-11-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 03:44
Analyst: MKS
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00038	1
Benzene	ND		mg/kg	0.00093	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00093	0.00055	1
Ethylbenzene	ND		mg/kg	0.0019	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	ND		mg/kg	0.0019	0.00054	1
Xylenes, Total	ND		mg/kg	0.0019	0.00054	1
Isopropylbenzene	0.0010	J	mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**182**	Q	70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-14
Client ID: FB061623
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:14
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 06/23/23 14:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 06/23/23 10:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-14
Client ID: FB061623
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:14
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/18/23 23:40
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-15
Client ID: DUP55
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 00:00
Date Received: 06/16/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 02:26
Analyst: MKS
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/18/23 17:53
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 14 Batch: WG1793522-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	82		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 06/23/23 13:24
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 06/23/23 10:52

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 14 Batch: WG1795302-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/22/23 22:06
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,05-13,15 Batch: WG1795319-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/22/23 22:06
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1795320-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 14 Batch: WG1793522-3 WG1793522-4								
Methyl tert butyl ether	90		98		63-130	9		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	110		120		70-130	9		20
Toluene	95		100		70-130	5		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	100		93		70-130	7		20
1,3,5-Trimethylbenzene	96		85		64-130	12		20
1,2,4-Trimethylbenzene	94		96		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		109		70-130
Toluene-d8	96		100		70-130
4-Bromofluorobenzene	106		91		70-130
Dibromofluoromethane	105		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 14		Batch: WG1795302-2						
1,2-Dibromoethane	**125**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,05-13,15 Batch: WG1795319-3 WG1795319-4								
Methyl tert butyl ether	87		83		66-130	5		30
Benzene	79		76		70-130	4		30
1,2-Dichloroethane	99		94		70-130	5		30
Toluene	76		74		70-130	3		30
1,2-Dibromoethane	77		76		70-130	1		30
Ethylbenzene	80		79		70-130	1		30
p/m-Xylene	84		82		70-130	2		30
o-Xylene	85		83		70-130	2		30
Isopropylbenzene	77		76		70-130	1		30
1,3,5-Trimethylbenzene	80		78		70-130	3		30
1,2,4-Trimethylbenzene	79		77		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	118		114		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	107		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1795320-3 WG1795320-4								
Methyl tert butyl ether	87		83		66-130	5		30
Benzene	79		76		70-130	4		30
1,2-Dichloroethane	99		94		70-130	5		30
Toluene	76		74		70-130	3		30
1,2-Dibromoethane	77		76		70-130	1		30
Ethylbenzene	80		79		70-130	1		30
p/m-Xylene	84		82		70-130	2		30
o-Xylene	85		83		70-130	2		30
Isopropylbenzene	77		76		70-130	1		30
1,3,5-Trimethylbenzene	80		78		70-130	3		30
1,2,4-Trimethylbenzene	79		77		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	118		114		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	107		104		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-01
Client ID: GPR1038-01-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:55
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 20:32
Analyst: CMM
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.55		mg/kg	0.045	0.028	1
Fluorene	0.18	J	mg/kg	0.23	0.022	1
Phenanthrene	0.62		mg/kg	0.14	0.028	1
Anthracene	0.24		mg/kg	0.14	0.044	1
Pyrene	1.2		mg/kg	0.14	0.022	1
Benzo(a)anthracene	0.96		mg/kg	0.14	0.026	1
Chrysene	0.98		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.038	1
Benzo(a)pyrene	1.0		mg/kg	0.18	0.055	1
Benzo(ghi)perylene	0.50		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-02 D
Client ID: GPR1038-02-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:35
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/25/23 00:12
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.55		mg/kg	0.20	0.12	5
Fluorene	0.88	J	mg/kg	1.0	0.099	5
Phenanthrene	1.4		mg/kg	0.61	0.12	5
Anthracene	0.52	J	mg/kg	0.61	0.20	5
Pyrene	1.1		mg/kg	0.61	0.10	5
Benzo(a)anthracene	0.73		mg/kg	0.61	0.11	5
Chrysene	0.90		mg/kg	0.61	0.10	5
Benzo(b)fluoranthene	0.68		mg/kg	0.61	0.17	5
Benzo(a)pyrene	0.72	J	mg/kg	0.81	0.25	5
Benzo(ghi)perylene	0.54	J	mg/kg	0.81	0.12	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	53		30-120
4-Terphenyl-d14	39		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-03
Client ID: GPR1038-03-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 21:22
Analyst: CMM
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.042	J	mg/kg	0.044	0.027	1
Fluorene	0.029	J	mg/kg	0.22	0.021	1
Phenanthrene	0.18		mg/kg	0.13	0.027	1
Anthracene	0.055	J	mg/kg	0.13	0.043	1
Pyrene	0.35		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.29		mg/kg	0.13	0.025	1
Chrysene	0.28		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	0.29		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.25		mg/kg	0.18	0.053	1
Benzo(ghi)perylene	0.12	J	mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-04 D
Client ID: GPR1038-05-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:40
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/25/23 18:15
Analyst: IM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.83		mg/kg	0.22	0.13	5
Fluorene	ND		mg/kg	1.1	0.11	5
Phenanthrene	1.6		mg/kg	0.66	0.13	5
Anthracene	0.44	J	mg/kg	0.66	0.21	5
Pyrene	1.9		mg/kg	0.66	0.11	5
Benzo(a)anthracene	ND		mg/kg	0.66	0.12	5
Chrysene	ND		mg/kg	0.66	0.11	5
Benzo(b)fluoranthene	0.44	J	mg/kg	0.66	0.18	5
Benzo(a)pyrene	0.59	J	mg/kg	0.88	0.27	5
Benzo(ghi)perylene	0.50	J	mg/kg	0.88	0.13	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-05 D
Client ID: GPR1039-01-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 10:05
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/24/23 00:41
Analyst: CMM
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.36	J	mg/kg	0.44	0.27	10
Fluorene	0.67	J	mg/kg	2.2	0.22	10
Phenanthrene	2.1		mg/kg	1.3	0.27	10
Anthracene	0.46	J	mg/kg	1.3	0.43	10
Pyrene	1.2	J	mg/kg	1.3	0.22	10
Benzo(a)anthracene	0.37	J	mg/kg	1.3	0.25	10
Chrysene	0.92	J	mg/kg	1.3	0.23	10
Benzo(b)fluoranthene	ND		mg/kg	1.3	0.37	10
Benzo(a)pyrene	ND		mg/kg	1.8	0.54	10
Benzo(ghi)perylene	0.26	J	mg/kg	1.8	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	32		23-120
2-Fluorobiphenyl	**26**	Q	30-120
4-Terphenyl-d14	20		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-06 D
Client ID: GPR1039-02-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/25/23 18:33
Analyst: IM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.24	0.14	5
Fluorene	0.38	J	mg/kg	1.2	0.12	5
Phenanthrene	1.5		mg/kg	0.71	0.14	5
Anthracene	0.42	J	mg/kg	0.71	0.23	5
Pyrene	1.5		mg/kg	0.71	0.12	5
Benzo(a)anthracene	ND		mg/kg	0.71	0.13	5
Chrysene	ND		mg/kg	0.71	0.12	5
Benzo(b)fluoranthene	0.68	J	mg/kg	0.71	0.20	5
Benzo(a)pyrene	0.64	J	mg/kg	0.95	0.29	5
Benzo(ghi)perylene	0.56	J	mg/kg	0.95	0.14	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-07
Client ID: GPR1039-03-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:40
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 22:36
Analyst: CMM
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.26		mg/kg	0.044	0.027	1
Fluorene	0.17	J	mg/kg	0.22	0.021	1
Phenanthrene	0.58		mg/kg	0.13	0.027	1
Anthracene	0.15		mg/kg	0.13	0.043	1
Pyrene	0.86		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.34		mg/kg	0.13	0.025	1
Chrysene	0.48		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	0.36		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.33		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	0.25		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-08 D
Client ID: GPR1039-04-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:50
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/25/23 16:33
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.91		mg/kg	0.43	0.26	10
Fluorene	1.6	J	mg/kg	2.2	0.21	10
Phenanthrene	5.4		mg/kg	1.3	0.26	10
Anthracene	1.7		mg/kg	1.3	0.42	10
Pyrene	2.6		mg/kg	1.3	0.21	10
Benzo(a)anthracene	ND		mg/kg	1.3	0.24	10
Chrysene	ND		mg/kg	1.3	0.22	10
Benzo(b)fluoranthene	ND		mg/kg	1.3	0.36	10
Benzo(a)pyrene	ND		mg/kg	1.7	0.53	10
Benzo(ghi)perylene	ND		mg/kg	1.7	0.25	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	118		23-120
2-Fluorobiphenyl	36		30-120
4-Terphenyl-d14	28		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-09 D
Client ID: GPR1039-05-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 09:20
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/24/23 23:47
Analyst: CMM
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.97		mg/kg	0.25	0.15	5
Fluorene	1.3		mg/kg	1.2	0.12	5
Phenanthrene	2.6		mg/kg	0.75	0.15	5
Anthracene	1.2		mg/kg	0.75	0.24	5
Pyrene	2.5		mg/kg	0.75	0.12	5
Benzo(a)anthracene	0.54	J	mg/kg	0.75	0.14	5
Chrysene	0.73	J	mg/kg	0.75	0.13	5
Benzo(b)fluoranthene	0.42	J	mg/kg	0.75	0.21	5
Benzo(a)pyrene	0.40	J	mg/kg	1.0	0.30	5
Benzo(ghi)perylene	0.27	J	mg/kg	1.0	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	47		30-120
4-Terphenyl-d14	39		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-10
Client ID: GPR272-06-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 23:26
Analyst: CMM
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.64		mg/kg	0.048	0.029	1
Fluorene	0.041	J	mg/kg	0.24	0.023	1
Phenanthrene	0.14		mg/kg	0.14	0.029	1
Anthracene	0.081	J	mg/kg	0.14	0.047	1
Pyrene	0.25		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.28		mg/kg	0.14	0.027	1
Chrysene	0.33		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.49		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.46		mg/kg	0.19	0.059	1
Indeno(1,2,3-cd)pyrene	0.37		mg/kg	0.19	0.033	1
Benzo(ghi)perylene	0.32		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	44		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-11
Client ID: GPR272-07-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:20
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 23:51
Analyst: CMM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.051	0.031	1
Fluorene	0.22	J	mg/kg	0.25	0.025	1
Phenanthrene	0.30		mg/kg	0.15	0.031	1
Anthracene	0.15		mg/kg	0.15	0.050	1
Pyrene	0.50		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.23		mg/kg	0.15	0.028	1
Chrysene	0.29		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	0.28		mg/kg	0.15	0.043	1
Benzo(a)pyrene	0.27		mg/kg	0.20	0.062	1
Indeno(1,2,3-cd)pyrene	0.18	J	mg/kg	0.20	0.035	1
Benzo(ghi)perylene	0.16	J	mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-12
Client ID: GPR272-10-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:05
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/24/23 00:16
Analyst: CMM
Percent Solids: 61%

Extraction Method: EPA 3546
Extraction Date: 06/18/23 23:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.31		mg/kg	0.054	0.033	1
Fluorene	0.069	J	mg/kg	0.27	0.026	1
Phenanthrene	0.23		mg/kg	0.16	0.033	1
Anthracene	ND		mg/kg	0.16	0.052	1
Pyrene	0.22		mg/kg	0.16	0.027	1
Benzo(a)anthracene	0.064	J	mg/kg	0.16	0.030	1
Chrysene	0.089	J	mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.065	J	mg/kg	0.16	0.045	1
Benzo(a)pyrene	ND		mg/kg	0.21	0.066	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.21	0.037	1
Benzo(ghi)perylene	0.034	J	mg/kg	0.21	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-13
Client ID: GPR272-11-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 14:45
Analyst: JG
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 06/21/23 08:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.3		mg/kg	0.059	0.036	1
Fluorene	0.47		mg/kg	0.29	0.028	1
Phenanthrene	1.2		mg/kg	0.18	0.036	1
Anthracene	0.61		mg/kg	0.18	0.057	1
Pyrene	1.6		mg/kg	0.18	0.029	1
Benzo(a)anthracene	0.66		mg/kg	0.18	0.033	1
Chrysene	0.81		mg/kg	0.18	0.030	1
Benzo(b)fluoranthene	0.94		mg/kg	0.18	0.050	1
Benzo(a)pyrene	0.93		mg/kg	0.24	0.072	1
Indeno(1,2,3-cd)pyrene	0.49		mg/kg	0.24	0.041	1
Benzo(ghi)perylene	0.68		mg/kg	0.24	0.034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-14
Client ID: FB061623
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:14
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 06/23/23 10:11
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/22/23 00:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	61		15-120
4-Terphenyl-d14	48		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-15
Client ID: DUP55
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 00:00
Date Received: 06/16/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 19:24
Analyst: IM
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 06/20/23 23:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.7		mg/kg	0.052	0.032	1
Fluorene	0.16	J	mg/kg	0.26	0.025	1
Phenanthrene	0.48		mg/kg	0.16	0.032	1
Anthracene	0.19		mg/kg	0.16	0.051	1
Pyrene	0.51		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.44		mg/kg	0.16	0.029	1
Chrysene	0.48		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	0.75		mg/kg	0.16	0.044	1
Benzo(a)pyrene	0.83		mg/kg	0.21	0.064	1
Indeno(1,2,3-cd)pyrene	0.50		mg/kg	0.21	0.036	1
Benzo(ghi)perylene	0.60		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	50		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/23/23 15:56
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/18/23 10:01

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1792823-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		25-120
Phenol-d6	88		10-120
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	102		10-136
4-Terphenyl-d14	91		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/24/23 16:35
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 06/20/23 17:35

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 13,15 Batch: WG1793907-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	70		10-136
4-Terphenyl-d14	83		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 06/23/23 15:11
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 06/22/23 00:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 14 Batch: WG1794557-1					
Naphthalene	0.16		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	43		15-120
4-Terphenyl-d14	**37**	Q	41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1792823-2 WG1792823-3								
Naphthalene	74		77		40-140	4		50
Fluorene	78		82		40-140	5		50
Phenanthrene	76		80		40-140	5		50
Anthracene	77		82		40-140	6		50
Pyrene	79		84		35-142	6		50
Benzo(a)anthracene	75		80		40-140	6		50
Chrysene	76		82		40-140	8		50
Benzo(b)fluoranthene	76		86		40-140	12		50
Benzo(a)pyrene	78		82		40-140	5		50
Indeno(1,2,3-cd)pyrene	87		94		40-140	8		50
Benzo(ghi)perylene	80		84		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	85		91		25-120
Phenol-d6	82		87		10-120
Nitrobenzene-d5	81		86		23-120
2-Fluorobiphenyl	73		78		30-120
2,4,6-Tribromophenol	91		97		10-136
4-Terphenyl-d14	80		85		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 13,15 Batch: WG1793907-2 WG1793907-3								
Naphthalene	84		87		40-140	4		50
Fluorene	83		82		40-140	1		50
Phenanthrene	87		87		40-140	0		50
Anthracene	88		89		40-140	1		50
Pyrene	83		82		35-142	1		50
Benzo(a)anthracene	82		81		40-140	1		50
Chrysene	82		80		40-140	2		50
Benzo(b)fluoranthene	86		84		40-140	2		50
Benzo(a)pyrene	87		86		40-140	1		50
Indeno(1,2,3-cd)pyrene	85		85		40-140	0		50
Benzo(ghi)perylene	82		81		40-140	1		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	92		93		25-120
Phenol-d6	87		87		10-120
Nitrobenzene-d5	69		72		23-120
2-Fluorobiphenyl	86		86		30-120
2,4,6-Tribromophenol	96		97		10-136
4-Terphenyl-d14	83		82		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 14 Batch: WG1794557-2 WG1794557-3								
Naphthalene	55		60		40-140	9		40
Fluorene	60		69		40-140	14		40
Phenanthrene	57		66		40-140	15		40
Anthracene	63		73		40-140	15		40
Pyrene	60		67		26-127	11		40
Benzo(a)anthracene	68		78		40-140	14		40
Chrysene	64		73		40-140	13		40
Benzo(b)fluoranthene	66		74		40-140	11		40
Benzo(a)pyrene	72		83		40-140	14		40
Indeno(1,2,3-cd)pyrene	65		78		40-140	18		40
Benzo(ghi)perylene	64		78		40-140	20		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	73		80		23-120
2-Fluorobiphenyl	53		59		15-120
4-Terphenyl-d14	45		49		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-01
Client ID: GPR1038-01-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 08:55
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	255		mg/kg	2.61	0.140	1	06/30/23 11:07	07/12/23 19:19	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-02
Client ID: GPR1038-02-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 08:35
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	686		mg/kg	2.41	0.129	1	06/30/23 11:07	07/12/23 19:22	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-03
Client ID: GPR1038-03-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 08:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	232		mg/kg	2.61	0.140	1	06/30/23 11:07	07/12/23 19:25	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-04
Client ID: GPR1038-05-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 08:40
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	256		mg/kg	2.54	0.136	1	06/30/23 11:07	07/12/23 19:28	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-10
Client ID: GPR272-06-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	136		mg/kg	2.77	0.148	1	06/21/23 03:55	06/22/23 18:02	EPA 3050B	1,6010D	TAA

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-11
Client ID: GPR272-07-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 13:20
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	238		mg/kg	2.99	0.160	1	06/21/23 03:55	06/22/23 18:05	EPA 3050B	1,6010D	TAA

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-12
Client ID: GPR272-10-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 14:05
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 61%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	320		mg/kg	3.15	0.169	1	06/21/23 03:55	06/22/23 18:08	EPA 3050B	1,6010D	TAA

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-13
Client ID: GPR272-11-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	368		mg/kg	3.36	0.180	1	06/21/23 03:55	06/22/23 18:10	EPA 3050B	1,6010D	TAA

Project Name: PHILADELPHIA REFINERY
Lab Number: L2334803
Project Number: 200.00135.014.03
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-14
Client ID: FB061623
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 13:14
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	06/21/23 21:00	06/23/23 08:46	EPA 3005A	1,6020B	SMV

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-15
Client ID: DUP55
Sample Location: PHILADELPHIA PA
Date Collected: 06/16/23 00:00
Date Received: 06/16/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	139		mg/kg	3.01	0.162	1	06/21/23 03:55	06/22/23 18:13	EPA 3050B	1,6010D	TAA

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 14 Batch: WG1793342-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	06/21/23 21:00	06/22/23 09:01	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10-13,15 Batch: WG1793732-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	06/21/23 03:55	06/21/23 18:11	1,6010D	TAA

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1798004-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	06/30/23 11:07	07/05/23 07:58	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 14 Batch: WG1793342-2								
Lead, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 10-13,15 Batch: WG1793732-2 SRM Lot Number: D119-540								
Lead, Total	96		-		82-118	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1798004-2 SRM Lot Number: D119-540								
Lead, Total	105		-		82-118	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 14 QC Batch ID: WG1793342-3 QC Sample: L2334213-01 Client ID: MS Sample												
Lead, Total	3.889	530	550.6	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 10-13,15 QC Batch ID: WG1793732-3 QC Sample: L2334915-01 Client ID: MS Sample												
Lead, Total	46.1	47.3	87.3	87		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1798004-3 QC Sample: L2337178-12 Client ID: MS Sample												
Lead, Total	6.45	44.9	52.3	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 14 QC Batch ID: WG1793342-4 QC Sample: L2334213-01 Client ID: DUP Sample						
Lead, Total	3.889	3.149	ug/l	**21**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1798004-4 QC Sample: L2337178-12 Client ID: DUP Sample						
Lead, Total	6.45	10.1	mg/kg	**44**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-01
Client ID: GPR1038-01-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:55
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.8		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI
pH (H)	8.62		SU	-	NA	1	-	06/22/23 03:30	1,9045D	OCF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-02
Client ID: GPR1038-02-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 08:35
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI
pH (H)	7.18		SU	-	NA	1	-	06/22/23 03:30	1,9045D	OCF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-03
Client ID: GPR1038-03-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/16/23 08:30
Date Received: 06/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.1		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI
pH (H)	8.13		SU	-	NA	1	-	06/22/23 03:30	1,9045D	OCF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-04
Client ID: GPR1038-05-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 08:40
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.7		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI
pH (H)	7.28		SU	-	NA	1	-	06/22/23 03:30	1,9045D	OCF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-05
Client ID: GPR1039-01-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 10:05
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.5		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-06
Client ID: GPR1039-02-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 09:30
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.9		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-07
Client ID: GPR1039-03-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 09:40
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.0		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-08
Client ID: GPR1039-04-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 09:50
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.1		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-09
Client ID: GPR1039-05-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 09:20
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.0		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-10
Client ID: GPR272-06-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.1		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-11
Client ID: GPR272-07-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 13:20
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.6		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-12
Client ID: GPR272-10-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 14:05
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.7		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-13
Client ID: GPR272-11-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/16/23 14:00
Date Received: 06/16/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.6		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2334803
Report Date: 07/13/23

SAMPLE RESULTS

Lab ID: L2334803-15
Client ID: DUP55
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil
Date Collected: 06/16/23 00:00
Date Received: 06/16/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.3		%	0.100	NA	1	-	06/20/23 10:44	121,2540G	ROI

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1794584-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2334803

Report Date: 07/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-13,15 QC Batch ID: WG1793567-1 QC Sample: L2334803-01 Client ID: GPR1038-01-SS01						
Solids, Total	72.8	72.6	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1794584-2 QC Sample: L2332536-01 Client ID: DUP Sample						
pH	7.58	7.28	SU	4		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2334803-01A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-01B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-01C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-01D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-01E	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2334803-01F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180),PH-9045(1),PA-PAH(14)
L2334803-02A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-02B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-02C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-02D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-02E	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2334803-02F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PB-TI(180),PA-PAH(14)
L2334803-03A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-03B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-03C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-03D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-03E	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2334803-03F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180),PH-9045(1),PA-PAH(14)
L2334803-04A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-04B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-04C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-04D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2334803-04E	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2334803-04F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180),PH-9045(1),PA-PAH(14)
L2334803-05A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-05B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-05C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-05D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-05E	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-05F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-06A	Vial MeOH preserved	B	NA		4.6	Y	Absent		PA-8260HLW(14)
L2334803-06B	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-06C	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-06D	Plastic 2oz unpreserved for TS	B	NA		4.6	Y	Absent		TS(7)
L2334803-06E	Glass 60mL/2oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-06F	Glass 120ml/4oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-07A	Vial MeOH preserved	B	NA		4.6	Y	Absent		PA-8260HLW(14)
L2334803-07B	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-07C	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-07D	Plastic 2oz unpreserved for TS	B	NA		4.6	Y	Absent		TS(7)
L2334803-07E	Glass 60mL/2oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-07F	Glass 120ml/4oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-08A	Vial MeOH preserved	B	NA		4.6	Y	Absent		PA-8260HLW(14)
L2334803-08B	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-08C	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-08D	Plastic 2oz unpreserved for TS	B	NA		4.6	Y	Absent		TS(7)
L2334803-08E	Glass 60mL/2oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-08F	Glass 120ml/4oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-09A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-09B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2334803-09C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-09D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-09E	Glass 250ml/8oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-09F	Glass 250ml/8oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-10A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-10B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-10C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-10D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2334803-10F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-11A	Vial MeOH preserved	B	NA		4.6	Y	Absent		PA-8260HLW(14)
L2334803-11B	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-11C	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-11D	Plastic 2oz unpreserved for TS	B	NA		4.6	Y	Absent		TS(7)
L2334803-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.6	Y	Absent		PB-TI(180)
L2334803-11F	Glass 120ml/4oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)
L2334803-12A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-12B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-12C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-12D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2334803-12F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)
L2334803-13A	Vial MeOH preserved	A	NA		3.4	Y	Absent		PA-8260HLW(14)
L2334803-13B	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-13C	Vial water preserved	A	NA		3.4	Y	Absent	17-JUN-23 15:30	PA-8260HLW(14)
L2334803-13D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L2334803-13E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		PB-TI(180)
L2334803-13F	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2334803
Report Date: 07/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2334803-14A	Vial HCl preserved	B	NA		4.6	Y	Absent		PA-8260(14)
L2334803-14B	Vial HCl preserved	B	NA		4.6	Y	Absent		PA-8260(14)
L2334803-14C	Vial HCl preserved	B	NA		4.6	Y	Absent		PA-8260(14)
L2334803-14D	Vial Na2S2O3 preserved	B	NA		4.6	Y	Absent		8011(14)
L2334803-14E	Vial Na2S2O3 preserved	B	NA		4.6	Y	Absent		8011(14)
L2334803-14G	Plastic 250ml HNO3 preserved	B	<2	<2	4.6	Y	Absent		PB-6020T-PPB(180)
L2334803-14H	Amber 250ml unpreserved	B	7	7	4.6	Y	Absent		PA-PAHSIM-LVI(7)
L2334803-14I	Amber 250ml unpreserved	B	7	7	4.6	Y	Absent		PA-PAHSIM-LVI(7)
L2334803-15A	Vial MeOH preserved	B	NA		4.6	Y	Absent		PA-8260HLW(14)
L2334803-15B	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:33	PA-8260HLW(14)
L2334803-15C	Vial water preserved	B	NA		4.6	Y	Absent	17-JUN-23 15:33	PA-8260HLW(14)
L2334803-15D	Plastic 2oz unpreserved for TS	B	NA		4.6	Y	Absent		TS(7)
L2334803-15E	Glass 60mL/2oz unpreserved	B	NA		4.6	Y	Absent		PB-TI(180)
L2334803-15F	Glass 120ml/4oz unpreserved	B	NA		4.6	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2334803
Project Number:	200.00135.014.03	**Report Date:**	07/13/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 6/17/23

ALPHA Job #: L2334803

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2174 Hamilton Rd
Hamilton NJ
Phone: 215 901 4979
Fax:
Email: William.Schmidt@ransomenviron.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia PA
Project #: 200.6035.014.05
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only project-specific analyte list** of PADEP standard/unvalid Gasoline + WO 2,4,5+6 Fuel oil short list Run Naphthalene using add Q-trimethylbenzene, William.Schmidt@ransom.com & JSeay@Mikeglobal.com Method 8270 Only email results to

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP short list 1-5	Site specific SVOC (8270C)	pH	lead	SAMPLE HANDLING	TOTAL # BOTTLES
34803 01	GPR1038-01	6/16/23	8:55	S	CO	✓	✓	✓			6
02	GPR1038-02		8:35			✓	✓	✓			6
03	GPR1038 03		8:30			✓	✓	✓			6
04	GPR1038 05		8:40			✓	✓	✓			6
05	GPR1039-01		10:05			✓	✓				6
06	GPR1039-02		9:30			✓	✓				6
07	GPR1039-03		9:40			✓	✓				6
08	GPR1039-04		9:50			✓	✓				6
09	GPR1039-05		9:20			✓	✓				6
10	GPR272-6		14:00			✓	✓		✓		6

Sample Specific Comments

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Container Type	G	G	G	G	G
Preservative	F	A		A	A

Relinquished By:	Date/Time	Received By:	Date/Time
	6/16/23 1545	Glenn Grimes	6/16/23 15:45
Glenn Grimes	6/16/23 18:05		6/16/23 1805
	6/16/23	MSMan	6/16 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

G117230315
G117230315

Serial_No:07132315:26

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 6/17/23

ALPHA Job #: L2334803

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Ave Hamilton NJ
Phone: 215 901 4979
Fax:
Email: William.Schmidt@RansomEnviro.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia PA
Project #: 200.00138.014.03
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
See pg 1 of 1 for Site Specific Requirements ***

ANALYSIS: PA Rev Short List; Site Specific 5VHC (8230C); 1PAH

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
34803 11	GPR272-7	6/16/23	13:20	S	CO		
12	GPR272-10		14:05				
13	GPR272-11		14:00				
14	FB061623		13:14				
15	Dup 55		—				

Container Type	G	G	G
Preservative	F	A	A

Relinquished By:	Date/Time	Received By:	Date/Time
Glenn Grimes	6/16/23 15:45	Glenn Grimes	6/16/23 15:45
Glenn Grimes	6/16/23 18:05	MSM	6/16/23 1805
	6/16/23		6/16 2100

6/17/23 0315
6/17/23 0315

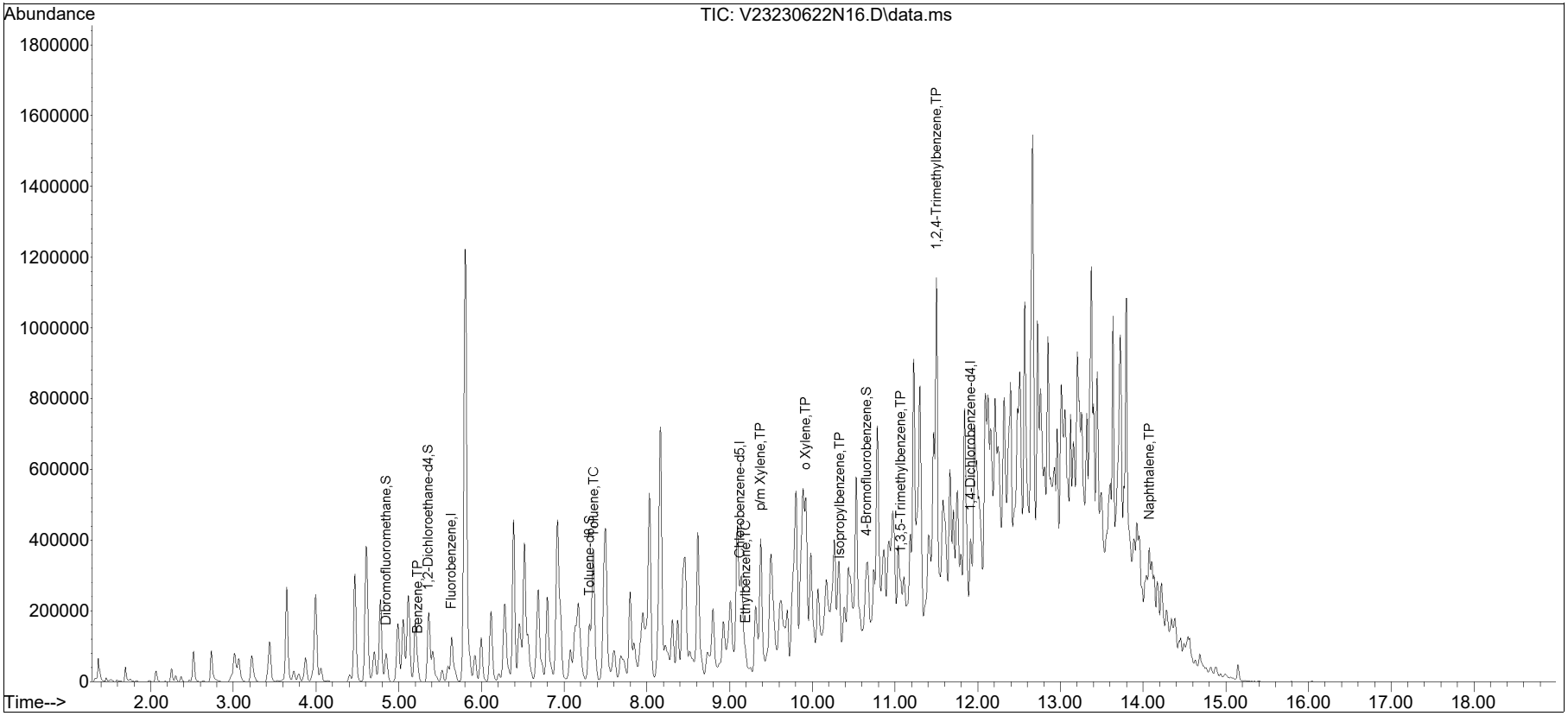
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2023\230622N\
Data File : V23230622N16.D
Acq On : 23 Jun 2023 02:52 am
Operator : VOA123:MKS
Sample : L2334803-01,31,5.16,5,,B
Misc : WG1795319,ICAL20024
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 23 08:51:09 2023
Quant Method : K:\VOA123\2023\230621N\V123_230518A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue May 23 09:22:30 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list622N01.D•

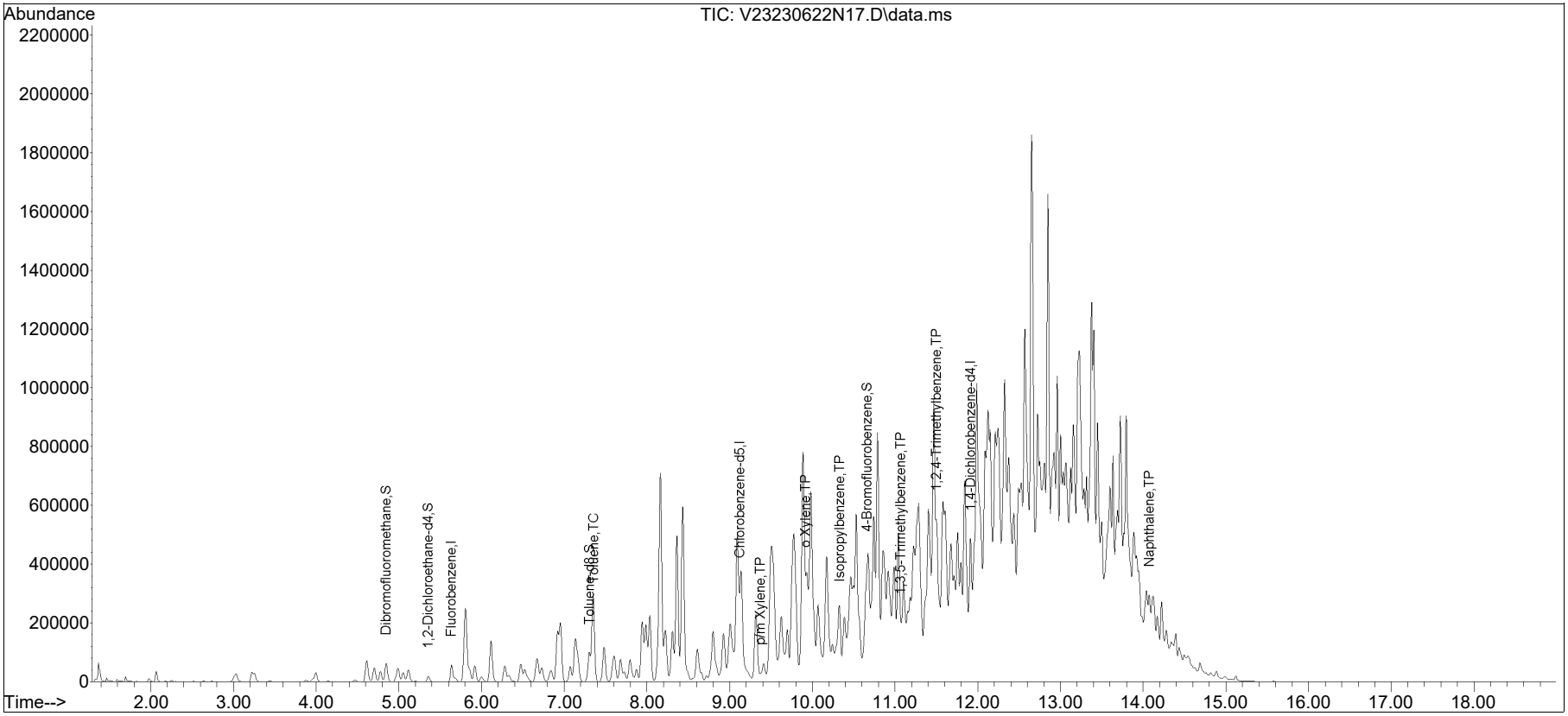


Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2023\230622N\
Data File : V23230622N17.D
Acq On : 23 Jun 2023 03:18 am
Operator : VOA123:MKS
Sample : L2334803-02,31,4.93,5,,B
Misc : WG1795319,ICAL20024
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 23 08:51:35 2023
Quant Method : K:\VOA123\2023\230621N\V123_230518A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue May 23 09:22:30 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list622N01.D•



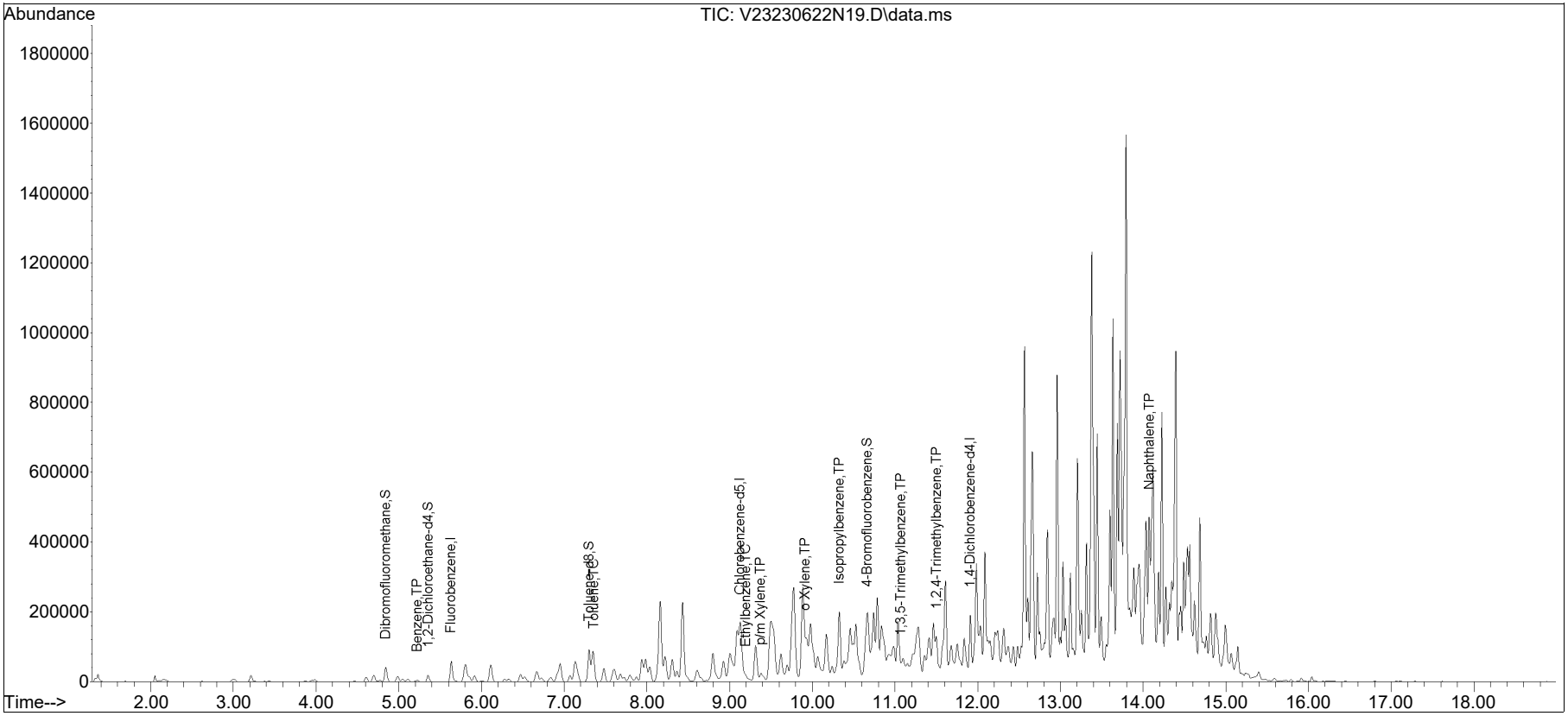
V123_230518A_8260.m Fri Jun 23 11:02:41 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2023\230622N\
Data File : V23230622N19.D
Acq On : 23 Jun 2023 04:10 am
Operator : VOA123:MKS
Sample : L2334803-04,31H,4.23,5,0.100,,A
Misc : WG1795320,ICAL20024
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 23 07:51:40 2023
Quant Method : K:\VOA123\2023\230621N\V123_230518A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue May 23 09:22:30 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list622N01.D•

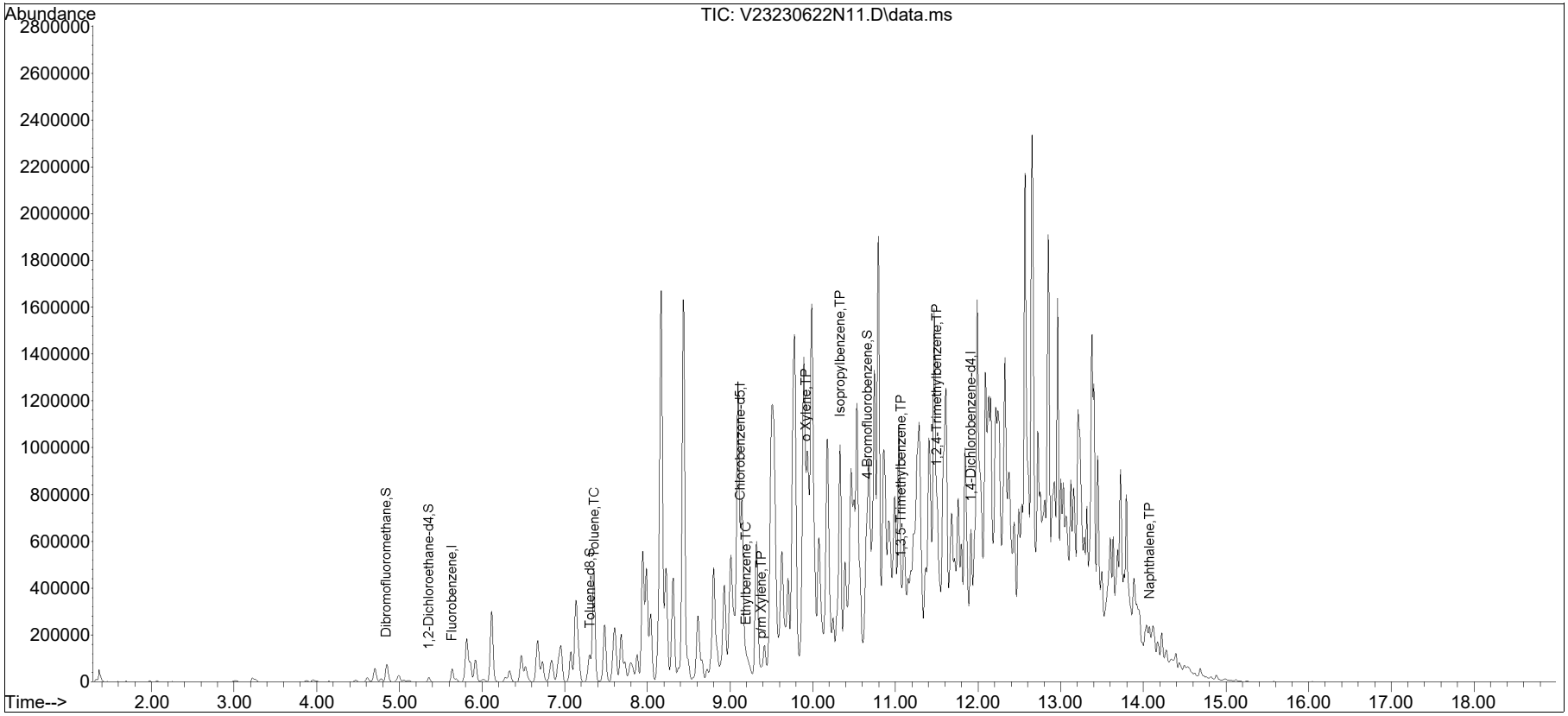


Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2023\230622N\
Data File : V23230622N11.D
Acq On : 23 Jun 2023 12:42 am
Operator : VOA123:MKS
Sample : L2334803-09,31,4.77,5,,B
Misc : WG1795319,ICAL20024
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 23 08:48:43 2023
Quant Method : K:\VOA123\2023\230621N\V123_230518A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue May 23 09:22:30 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list622N01.D•



ANALYTICAL REPORT

Lab Number:	L2335425
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.014.03
Report Date:	07/07/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2335425-01	GPR-272-15-SS01	SOIL	PHILADELPHIA PA	06/20/23 07:55	06/21/23
L2335425-02	GPR-272-14-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:05	06/21/23
L2335425-03	GPR-272-13-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:15	06/21/23
L2335425-04	GPR-272-12-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:25	06/21/23
L2335425-05	GPR-272-5-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:35	06/21/23
L2335425-06	GPR-272-4-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:45	06/21/23
L2335425-07	GPR-272-9-SS01	SOIL	PHILADELPHIA PA	06/20/23 08:55	06/21/23
L2335425-08	GPR-272-3-SS01	SOIL	PHILADELPHIA PA	06/20/23 12:10	06/21/23
L2335425-09	GPR-272-2-SS01	SOIL	PHILADELPHIA PA	06/20/23 12:15	06/21/23
L2335425-10	GPR-272-1-SS01	SOIL	PHILADELPHIA PA	06/20/23 12:30	06/21/23
L2335425-11	GPR-273-8-SS01	SOIL	PHILADELPHIA PA	06/20/23 13:10	06/21/23
L2335425-12	GPR-273-7-SS01	SOIL	PHILADELPHIA PA	06/20/23 13:25	06/21/23
L2335425-13	GPR-273-3-SS01	SOIL	PHILADELPHIA PA	06/20/23 13:40	06/21/23
L2335425-14	GPR-273-2-SS01	SOIL	PHILADELPHIA PA	06/20/23 13:50	06/21/23
L2335425-15	GPR-273-4-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:00	06/21/23
L2335425-16	GPR-273-1-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:10	06/21/23
L2335425-17	GPR-273-5-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:15	06/21/23
L2335425-18	GPR-273-12-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:25	06/21/23
L2335425-19	GPR-273-13-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:35	06/21/23
L2335425-20	GPR-273-11-SS01	SOIL	PHILADELPHIA PA	06/20/23 14:40	06/21/23
L2335425-21	GPR-273-14-SS01	SOIL	PHILADELPHIA PA	06/20/23 15:00	06/21/23
L2335425-22	GPR-273-9-SS01	SOIL	PHILADELPHIA PA	06/20/23 15:10	06/21/23
L2335425-23	DUP-56	SOIL	PHILADELPHIA PA	06/20/23 15:20	06/21/23
L2335425-24	FB062023	WATER	PHILADELPHIA PA	06/20/23 12:50	06/21/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

Case Narrative (continued)

Report Revision

July 07, 2023: At the client's request, the Semivolatile Organics reporting list has been amended to include Indeno(1,2,3)pyrene on L2335425-01 through -10. Additionally, the Microextractables eporting list has been corrected on L2335425-24.

Report Submission

July 06, 2023: This final report includes the results of all requested analyses.

June 28, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2335425-01 through -22: The Client ID was specified by the client.

L2335425-24: A sample container for Total Lead was received for the "FB062023" sample, but was not listed on the chain of custody. At the client's request, the analysis was performed.

Volatile Organics

L2335425-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (172%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2335425-07: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (206%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2335425-10: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (138%) and 4-bromofluorobenzene (386%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

Case Narrative (continued)

L2335425-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (299%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2335425-12: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (371%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2335425-13: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (166%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2335425-14: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (431%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2335425-15: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (150%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2335425-16 and -23: The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis. The results of both analyses are reported.
L2335425-19: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (142%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables
The WG1797164-2 LCS recovery for 1,2-dibromoethane (125%), associated with L2335425-24, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

Case Narrative (continued)

Semivolatile Organics

L2335425-03 through -22: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

Total Metals

The WG1796981-3 MS recovery, performed on L2335425-01, is outside the acceptance criteria for lead (25%). A post digestion spike was performed and yielded an unacceptable recovery for lead (32%). The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 07/07/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-01
Client ID: GPR-272-15-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 07:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 17:08
Analyst: AJK
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00031	1
Benzene	ND		mg/kg	0.00076	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	ND		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00076	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0030	0.00086	1
o-Xylene	0.0024		mg/kg	0.0015	0.00044	1
Xylenes, Total	0.0024		mg/kg	0.0015	0.00044	1
Isopropylbenzene	0.0015		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.0025	J	mg/kg	0.0030	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**172**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-02
Client ID: GPR-272-14-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:05
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 14:42
Analyst: AJK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00067	1
o-Xylene	ND		mg/kg	0.0012	0.00035	1
Xylenes, Total	ND		mg/kg	0.0012	0.00035	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-03
Client ID: GPR-272-13-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 17:28
Analyst: AJK
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00025	J	mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00070	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00072	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-04
Client ID: GPR-272-12-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 15:03
Analyst: AJK
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-05
Client ID: GPR-272-5-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 17:49
Analyst: AJK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00037	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0026	0.00071	1
o-Xylene	ND		mg/kg	0.0013	0.00037	1
Xylenes, Total	ND		mg/kg	0.0013	0.00037	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-06
Client ID: GPR-272-4-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:45
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 15:24
Analyst: AJK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	ND		mg/kg	0.00075	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00081	1
1,2-Dibromoethane	ND		mg/kg	0.00075	0.00044	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00084	1
o-Xylene	ND		mg/kg	0.0015	0.00044	1
Xylenes, Total	ND		mg/kg	0.0015	0.00044	1
Isopropylbenzene	0.00023	J	mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-07
Client ID: GPR-272-9-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 18:10
Analyst: AJK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	0.00089	J	mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00041	1
Ethylbenzene	0.00025	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	0.00094	J	mg/kg	0.0014	0.00040	1
Xylenes, Total	0.00094	J	mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.00076	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0016	J	mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**206**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-08
Client ID: GPR-272-3-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 12:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 15:44
Analyst: AJK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	0.0014		mg/kg	0.00095	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00049	1
Toluene	0.0013	J	mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00095	0.00056	1
Ethylbenzene	0.00036	J	mg/kg	0.0019	0.00027	1
p/m-Xylene	0.0015	J	mg/kg	0.0038	0.0011	1
o-Xylene	0.00099	J	mg/kg	0.0019	0.00056	1
Xylenes, Total	0.0025	J	mg/kg	0.0019	0.00056	1
Isopropylbenzene	0.00042	J	mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	0.00068	J	mg/kg	0.0038	0.00037	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0038	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-09
Client ID: GPR-272-2-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 12:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 18:31
Analyst: AJK
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.00029	J	mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00076	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.00046	J	mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-10
Client ID: GPR-272-1-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 12:30
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 16:05
Analyst: AJK
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.00025	J	mg/kg	0.00070	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	0.0019		mg/kg	0.0014	0.00076	1
1,2-Dibromoethane	ND		mg/kg	0.00070	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.0039		mg/kg	0.0028	0.00079	1
o-Xylene	0.0030		mg/kg	0.0014	0.00041	1
Xylenes, Total	0.0069		mg/kg	0.0014	0.00041	1
Isopropylbenzene	0.050		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.00080	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0033		mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	**138**	Q	70-130
4-Bromofluorobenzene	**386**	Q	70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-11
Client ID: GPR-273-8-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 18:51
Analyst: AJK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.0029	J	mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00084	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	0.00096	J	mg/kg	0.0017	0.00091	1
1,2-Dibromoethane	ND		mg/kg	0.00084	0.00049	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	0.0012	J	mg/kg	0.0034	0.00094	1
o-Xylene	0.0032		mg/kg	0.0017	0.00049	1
Xylenes, Total	0.0044	J	mg/kg	0.0017	0.00049	1
Isopropylbenzene	0.012		mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0034	0.00032	1
1,2,4-Trimethylbenzene	0.0030	J	mg/kg	0.0034	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	122		70-130
4-Bromofluorobenzene	**299**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-12
Client ID: GPR-273-7-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 13:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 16:26
Analyst: AJK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00028	1
Benzene	ND		mg/kg	0.00068	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00035	1
Toluene	0.0012	J	mg/kg	0.0014	0.00074	1
1,2-Dibromoethane	ND		mg/kg	0.00068	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	0.0020	J	mg/kg	0.0027	0.00077	1
o-Xylene	0.0030		mg/kg	0.0014	0.00040	1
Xylenes, Total	0.0050	J	mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.019		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	0.0048		mg/kg	0.0027	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	122		70-130
4-Bromofluorobenzene	**371**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-13
Client ID: GPR-273-3-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 19:12
Analyst: AJK
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00040	1
Benzene	ND		mg/kg	0.00098	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00050	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.00098	0.00058	1
Ethylbenzene	0.00068	J	mg/kg	0.0020	0.00028	1
p/m-Xylene	0.0055		mg/kg	0.0039	0.0011	1
o-Xylene	0.0040		mg/kg	0.0020	0.00057	1
Xylenes, Total	0.0095		mg/kg	0.0020	0.00057	1
Isopropylbenzene	0.11		mg/kg	0.0020	0.00021	1
1,3,5-Trimethylbenzene	0.0086		mg/kg	0.0039	0.00038	1
1,2,4-Trimethylbenzene	0.012		mg/kg	0.0039	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**166**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-14
Client ID: GPR-273-2-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 16:47
Analyst: AJK
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00040	1
Benzene	0.00047	J	mg/kg	0.00098	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00050	1
Toluene	0.0018	J	mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.00098	0.00058	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	0.0092		mg/kg	0.0039	0.0011	1
o-Xylene	0.0068		mg/kg	0.0020	0.00057	1
Xylenes, Total	0.016		mg/kg	0.0020	0.00057	1
Isopropylbenzene	0.033		mg/kg	0.0020	0.00021	1
1,3,5-Trimethylbenzene	0.0059		mg/kg	0.0039	0.00038	1
1,2,4-Trimethylbenzene	0.013		mg/kg	0.0039	0.00066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	128		70-130
4-Bromofluorobenzene	**431**	Q	70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-15
Client ID: GPR-273-4-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 19:33
Analyst: AJK
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0042	0.00042	1
Benzene	ND		mg/kg	0.0010	0.00035	1
1,2-Dichloroethane	ND		mg/kg	0.0021	0.00054	1
Toluene	ND		mg/kg	0.0021	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00062	1
Ethylbenzene	ND		mg/kg	0.0021	0.00030	1
p/m-Xylene	0.0024	J	mg/kg	0.0042	0.0012	1
o-Xylene	0.0026		mg/kg	0.0021	0.00061	1
Xylenes, Total	0.0050	J	mg/kg	0.0021	0.00061	1
Isopropylbenzene	0.052		mg/kg	0.0021	0.00023	1
1,3,5-Trimethylbenzene	0.0022	J	mg/kg	0.0042	0.00040	1
1,2,4-Trimethylbenzene	0.0060		mg/kg	0.0042	0.00070	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**150**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-16
Client ID: GPR-273-1-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 19:54
Analyst: AJK
Percent Solids: 55%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.00075	J	mg/kg	0.0038	0.00038	1
Benzene	0.044		mg/kg	0.00094	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	0.29		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00094	0.00055	1
Ethylbenzene	0.061		mg/kg	0.0019	0.00026	1
p/m-Xylene	0.54		mg/kg	0.0038	0.0010	1
o-Xylene	0.21		mg/kg	0.0019	0.00055	1
Xylenes, Total	0.75		mg/kg	0.0019	0.00055	1
Isopropylbenzene	2.6	E	mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	0.12		mg/kg	0.0038	0.00036	1
1,2,4-Trimethylbenzene	0.35		mg/kg	0.0038	0.00063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	120		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-16
Client ID: GPR-273-1-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/28/23 07:09
Analyst: MKS
Percent Solids: 55%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.28	0.028	1
Benzene	0.069	J	mg/kg	0.071	0.024	1
1,2-Dichloroethane	ND		mg/kg	0.14	0.036	1
Toluene	0.98		mg/kg	0.14	0.077	1
1,2-Dibromoethane	ND		mg/kg	0.071	0.042	1
Ethylbenzene	0.11	J	mg/kg	0.14	0.020	1
p/m-Xylene	0.44		mg/kg	0.28	0.080	1
o-Xylene	0.17		mg/kg	0.14	0.041	1
Xylenes, Total	0.61		mg/kg	0.14	0.041	1
Isopropylbenzene	8.5		mg/kg	0.14	0.015	1
1,3,5-Trimethylbenzene	0.090	J	mg/kg	0.28	0.027	1
1,2,4-Trimethylbenzene	0.30		mg/kg	0.28	0.047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-17
Client ID: GPR-273-5-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 20:14
Analyst: AJK
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.00046	J	mg/kg	0.0030	0.00030	1
Benzene	0.0056		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.0097		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	0.0024		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.011		mg/kg	0.0030	0.00083	1
o-Xylene	0.0072		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.018		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.031		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.0053		mg/kg	0.0030	0.00028	1
1,2,4-Trimethylbenzene	0.011		mg/kg	0.0030	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-18
Client ID: GPR-273-12-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 20:35
Analyst: AJK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00033	1
Benzene	ND		mg/kg	0.00081	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00081	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00091	1
o-Xylene	0.00062	J	mg/kg	0.0016	0.00047	1
Xylenes, Total	0.00062	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	0.0032		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0015	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-19
Client ID: GPR-273-13-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 21:17
Analyst: AJK
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00032	1
Benzene	ND		mg/kg	0.00078	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00085	1
1,2-Dibromoethane	ND		mg/kg	0.00078	0.00046	1
Ethylbenzene	0.00022	J	mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00088	1
o-Xylene	0.0011	J	mg/kg	0.0016	0.00046	1
Xylenes, Total	0.0011	J	mg/kg	0.0016	0.00046	1
Isopropylbenzene	0.0044		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.0022	J	mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**142**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-20
Client ID: GPR-273-11-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/23 20:56
Analyst: AJK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00079	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00086	1
1,2-Dibromoethane	ND		mg/kg	0.00079	0.00046	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00089	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	0.0028		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00041	J	mg/kg	0.0032	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-21
Client ID: GPR-273-14-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/27/23 15:46
Analyst: JIC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0027	0.00028	1
Benzene	ND		mg/kg	0.00068	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00035	1
Toluene	ND		mg/kg	0.0014	0.00074	1
1,2-Dibromoethane	ND		mg/kg	0.00068	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0027	0.00077	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.00032	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0027	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0027	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-22
Client ID: GPR-273-9-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/27/23 16:12
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00026	1
Benzene	ND		mg/kg	0.00064	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00033	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00064	0.00037	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	ND		mg/kg	0.0013	0.00037	1
Xylenes, Total	ND		mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.00043	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-23
Client ID: DUP-56
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 15:20
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/27/23 16:38
Analyst: JIC
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00034	1
Benzene	0.0019		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	0.019		mg/kg	0.0017	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00049	1
Ethylbenzene	0.0058		mg/kg	0.0017	0.00024	1
p/m-Xylene	0.046		mg/kg	0.0033	0.00093	1
o-Xylene	0.018		mg/kg	0.0017	0.00048	1
Xylenes, Total	0.064		mg/kg	0.0017	0.00048	1
Isopropylbenzene	0.89	E	mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.010		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.029		mg/kg	0.0033	0.00056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-23
Client ID: DUP-56
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:20
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/28/23 09:54
Analyst: AJK
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	ND		mg/kg	0.065	0.022	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.033	1
Toluene	0.26		mg/kg	0.13	0.070	1
1,2-Dibromoethane	ND		mg/kg	0.065	0.038	1
Ethylbenzene	0.086	J	mg/kg	0.13	0.018	1
p/m-Xylene	0.30		mg/kg	0.26	0.073	1
o-Xylene	0.12	J	mg/kg	0.13	0.038	1
Xylenes, Total	0.42	J	mg/kg	0.13	0.038	1
Isopropylbenzene	6.9		mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.10	J	mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	0.31		mg/kg	0.26	0.043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-24
Client ID: FB062023
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 06/28/23 15:31
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 06/28/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	B

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-24
Client ID: FB062023
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 12:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/24/23 14:15
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/23/23 14:20
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-20 Batch: WG1796127-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/24/23 05:28
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 24 Batch: WG1796757-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 06/28/23 13:47
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 06/28/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 24 Batch: WG1797164-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	B

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2335425

Project Number: 200.00135.014.03 **Report Date:** 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/27/23 22:05
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 16 Batch: WG1797166-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2335425

Project Number: 200.00135.014.03 **Report Date:** 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/27/23 13:10
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 21-23 Batch: WG1797293-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/28/23 09:29
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 23 Batch: WG1797324-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-20 Batch: WG1796127-3 WG1796127-4								
Methyl tert butyl ether	94		98		66-130	4		30
Benzene	100		99		70-130	1		30
1,2-Dichloroethane	88		92		70-130	4		30
Toluene	92		92		70-130	0		30
1,2-Dibromoethane	88		90		70-130	2		30
Ethylbenzene	96		96		70-130	0		30
p/m-Xylene	95		94		70-130	1		30
o-Xylene	95		94		70-130	1		30
Isopropylbenzene	96		96		70-130	0		30
1,3,5-Trimethylbenzene	96		97		70-130	1		30
1,2,4-Trimethylbenzene	94		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		101		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	103		103		70-130
Dibromofluoromethane	99		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 24 Batch: WG1796757-3 WG1796757-4								
Methyl tert butyl ether	84		86		63-130	2		20
Benzene	91		94		70-130	3		20
1,2-Dichloroethane	85		86		70-130	1		20
Toluene	92		94		70-130	2		20
Ethylbenzene	91		94		70-130	3		20
p/m-Xylene	90		95		70-130	5		20
o-Xylene	90		95		70-130	5		20
Isopropylbenzene	91		92		70-130	1		20
1,3,5-Trimethylbenzene	89		92		64-130	3		20
1,2,4-Trimethylbenzene	90		91		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		87		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 24		Batch: WG1797164-2						
1,2-Dibromoethane	**125**	Q	-		80-120	-		20	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 16 Batch: WG1797166-3 WG1797166-4								
Methyl tert butyl ether	84		76		66-130	10		30
Benzene	92		81		70-130	13		30
1,2-Dichloroethane	88		79		70-130	11		30
Toluene	98		87		70-130	12		30
1,2-Dibromoethane	96		88		70-130	9		30
Ethylbenzene	100		86		70-130	15		30
p/m-Xylene	101		88		70-130	14		30
o-Xylene	99		89		70-130	11		30
Isopropylbenzene	102		88		70-130	15		30
1,3,5-Trimethylbenzene	101		88		70-130	14		30
1,2,4-Trimethylbenzene	102		89		70-130	14		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		92		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	92		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 21-23 Batch: WG1797293-3 WG1797293-4								
Methyl tert butyl ether	93		90		66-130	3		30
Benzene	80		76		70-130	5		30
1,2-Dichloroethane	97		93		70-130	4		30
Toluene	82		78		70-130	5		30
1,2-Dibromoethane	78		76		70-130	3		30
Ethylbenzene	87		83		70-130	5		30
p/m-Xylene	91		87		70-130	4		30
o-Xylene	90		87		70-130	3		30
Isopropylbenzene	86		81		70-130	6		30
1,3,5-Trimethylbenzene	87		83		70-130	5		30
1,2,4-Trimethylbenzene	85		81		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		114		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	93		93		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 23 Batch: WG1797324-3 WG1797324-4								
Methyl tert butyl ether	104		105		66-130	1		30
Benzene	88		88		70-130	0		30
1,2-Dichloroethane	105		105		70-130	0		30
Toluene	96		96		70-130	0		30
1,2-Dibromoethane	94		96		70-130	2		30
Ethylbenzene	100		100		70-130	0		30
p/m-Xylene	103		103		70-130	0		30
o-Xylene	104		105		70-130	1		30
Isopropylbenzene	100		100		70-130	0		30
1,3,5-Trimethylbenzene	106		105		70-130	1		30
1,2,4-Trimethylbenzene	107		105		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		107		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	102		100		70-130
Dibromofluoromethane	99		96		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-01
Client ID: GPR-272-15-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 07:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 15:19
Analyst: ALS
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.	E	mg/kg	0.048	0.030	1
Fluorene	1.6		mg/kg	0.24	0.024	1
Phenanthrene	5.2		mg/kg	0.14	0.029	1
Anthracene	1.6		mg/kg	0.14	0.047	1
Pyrene	5.0		mg/kg	0.14	0.024	1
Benzo(a)anthracene	2.5		mg/kg	0.14	0.027	1
Chrysene	3.2		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	4.3		mg/kg	0.14	0.041	1
Benzo(a)pyrene	4.2		mg/kg	0.19	0.059	1
Indeno(1,2,3-cd)pyrene	2.6		mg/kg	0.19	0.034	1
Benzo(ghi)perylene	2.5		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-01 D
Client ID: GPR-272-15-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 07:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/28/23 06:09
Analyst: ALS
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.		mg/kg	0.24	0.15	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-02
Client ID: GPR-272-14-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:05
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 15:44
Analyst: ALS
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.48		mg/kg	0.041	0.025	1
Fluorene	0.027	J	mg/kg	0.20	0.020	1
Phenanthrene	0.17		mg/kg	0.12	0.025	1
Anthracene	0.052	J	mg/kg	0.12	0.040	1
Pyrene	0.21		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.21		mg/kg	0.12	0.023	1
Chrysene	0.22		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.32		mg/kg	0.12	0.034	1
Benzo(a)pyrene	0.27		mg/kg	0.16	0.050	1
Indeno(1,2,3-cd)pyrene	0.20		mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.18		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-03
Client ID: GPR-272-13-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 16:09
Analyst: ALS
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.29		mg/kg	0.14	0.085	1
Fluorene	ND		mg/kg	0.70	0.068	1
Phenanthrene	0.13	J	mg/kg	0.42	0.085	1
Anthracene	ND		mg/kg	0.42	0.14	1
Pyrene	0.18	J	mg/kg	0.42	0.070	1
Benzo(a)anthracene	0.10	J	mg/kg	0.42	0.079	1
Chrysene	0.10	J	mg/kg	0.42	0.073	1
Benzo(b)fluoranthene	ND		mg/kg	0.42	0.12	1
Benzo(a)pyrene	ND		mg/kg	0.56	0.17	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.56	0.098	1
Benzo(ghi)perylene	ND		mg/kg	0.56	0.082	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-04
Client ID: GPR-272-12-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 16:34
Analyst: ALS
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.9		mg/kg	0.17	0.10	1
Fluorene	0.24	J	mg/kg	0.85	0.082	1
Phenanthrene	0.75		mg/kg	0.51	0.10	1
Anthracene	0.33	J	mg/kg	0.51	0.16	1
Pyrene	0.62		mg/kg	0.51	0.084	1
Benzo(a)anthracene	0.63		mg/kg	0.51	0.096	1
Chrysene	0.63		mg/kg	0.51	0.088	1
Benzo(b)fluoranthene	1.2		mg/kg	0.51	0.14	1
Benzo(a)pyrene	1.1		mg/kg	0.68	0.21	1
Indeno(1,2,3-cd)pyrene	0.89		mg/kg	0.68	0.12	1
Benzo(ghi)perylene	0.89		mg/kg	0.68	0.10	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	85		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-05
Client ID: GPR-272-5-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 16:59
Analyst: ALS
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.0		mg/kg	0.12	0.076	1
Fluorene	0.066	J	mg/kg	0.63	0.061	1
Phenanthrene	0.30	J	mg/kg	0.38	0.076	1
Anthracene	ND		mg/kg	0.38	0.12	1
Pyrene	0.16	J	mg/kg	0.38	0.062	1
Benzo(a)anthracene	0.12	J	mg/kg	0.38	0.071	1
Chrysene	0.15	J	mg/kg	0.38	0.065	1
Benzo(b)fluoranthene	0.15	J	mg/kg	0.38	0.10	1
Benzo(a)pyrene	ND		mg/kg	0.50	0.15	1
Indeno(1,2,3-cd)pyrene	0.11	J	mg/kg	0.50	0.087	1
Benzo(ghi)perylene	0.12	J	mg/kg	0.50	0.074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-06
Client ID: GPR-272-4-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:45
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 17:24
Analyst: ALS
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.6		mg/kg	0.13	0.080	1
Fluorene	0.26	J	mg/kg	0.66	0.064	1
Phenanthrene	0.61		mg/kg	0.39	0.080	1
Anthracene	0.24	J	mg/kg	0.39	0.13	1
Pyrene	0.74		mg/kg	0.39	0.065	1
Benzo(a)anthracene	0.44		mg/kg	0.39	0.074	1
Chrysene	0.53		mg/kg	0.39	0.068	1
Benzo(b)fluoranthene	0.66		mg/kg	0.39	0.11	1
Benzo(a)pyrene	0.57		mg/kg	0.52	0.16	1
Indeno(1,2,3-cd)pyrene	0.43	J	mg/kg	0.52	0.092	1
Benzo(ghi)perylene	0.38	J	mg/kg	0.52	0.077	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	87		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-07
Client ID: GPR-272-9-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 08:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 17:49
Analyst: ALS
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.8		mg/kg	0.13	0.080	1
Fluorene	0.23	J	mg/kg	0.65	0.064	1
Phenanthrene	0.73		mg/kg	0.39	0.080	1
Anthracene	0.23	J	mg/kg	0.39	0.13	1
Pyrene	1.0		mg/kg	0.39	0.065	1
Benzo(a)anthracene	0.61		mg/kg	0.39	0.074	1
Chrysene	0.72		mg/kg	0.39	0.068	1
Benzo(b)fluoranthene	0.87		mg/kg	0.39	0.11	1
Benzo(a)pyrene	0.86		mg/kg	0.52	0.16	1
Indeno(1,2,3-cd)pyrene	0.62		mg/kg	0.52	0.091	1
Benzo(ghi)perylene	0.58		mg/kg	0.52	0.077	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	77		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-08
Client ID: GPR-272-3-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 18:14
Analyst: ALS
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.8		mg/kg	0.14	0.087	1
Fluorene	0.28	J	mg/kg	0.71	0.069	1
Phenanthrene	1.2		mg/kg	0.43	0.086	1
Anthracene	0.47		mg/kg	0.43	0.14	1
Pyrene	3.5		mg/kg	0.43	0.071	1
Benzo(a)anthracene	3.4		mg/kg	0.43	0.080	1
Chrysene	3.2		mg/kg	0.43	0.074	1
Benzo(b)fluoranthene	4.8		mg/kg	0.43	0.12	1
Benzo(a)pyrene	4.1		mg/kg	0.57	0.17	1
Indeno(1,2,3-cd)pyrene	2.8		mg/kg	0.57	0.099	1
Benzo(ghi)perylene	2.3		mg/kg	0.57	0.084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-09
Client ID: GPR-272-2-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/27/23 21:31
Analyst: ALS
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 06/23/23 20:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.0		mg/kg	0.13	0.079	1
Fluorene	0.30	J	mg/kg	0.65	0.063	1
Phenanthrene	1.0		mg/kg	0.39	0.079	1
Anthracene	0.54		mg/kg	0.39	0.13	1
Pyrene	1.2		mg/kg	0.39	0.065	1
Benzo(a)anthracene	0.86		mg/kg	0.39	0.073	1
Chrysene	0.93		mg/kg	0.39	0.068	1
Benzo(b)fluoranthene	1.2		mg/kg	0.39	0.11	1
Benzo(a)pyrene	1.3		mg/kg	0.52	0.16	1
Indeno(1,2,3-cd)pyrene	0.82		mg/kg	0.52	0.091	1
Benzo(ghi)perylene	0.77		mg/kg	0.52	0.076	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-10
Client ID: GPR-272-1-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:30
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 18:39
Analyst: ALS
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.14	0.087	1
Fluorene	0.074	J	mg/kg	0.71	0.069	1
Phenanthrene	0.28	J	mg/kg	0.43	0.086	1
Anthracene	ND		mg/kg	0.43	0.14	1
Pyrene	0.30	J	mg/kg	0.43	0.071	1
Benzo(a)anthracene	0.22	J	mg/kg	0.43	0.080	1
Chrysene	0.24	J	mg/kg	0.43	0.074	1
Benzo(b)fluoranthene	0.35	J	mg/kg	0.43	0.12	1
Benzo(a)pyrene	0.30	J	mg/kg	0.57	0.17	1
Indeno(1,2,3-cd)pyrene	0.24	J	mg/kg	0.57	0.099	1
Benzo(ghi)perylene	0.22	J	mg/kg	0.57	0.084	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-11
Client ID: GPR-273-8-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/27/23 21:54
Analyst: ALS
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 06/23/23 20:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.1		mg/kg	0.16	0.10	1
Fluorene	2.3		mg/kg	0.82	0.080	1
Phenanthrene	8.2		mg/kg	0.49	0.10	1
Anthracene	2.0		mg/kg	0.49	0.16	1
Pyrene	4.3		mg/kg	0.49	0.082	1
Benzo(a)anthracene	1.5		mg/kg	0.49	0.093	1
Chrysene	1.7		mg/kg	0.49	0.086	1
Benzo(b)fluoranthene	1.2		mg/kg	0.49	0.14	1
Benzo(a)pyrene	1.1		mg/kg	0.66	0.20	1
Benzo(ghi)perylene	0.51	J	mg/kg	0.66	0.097	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-12
Client ID: GPR-273-7-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 19:04
Analyst: ALS
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.70		mg/kg	0.12	0.076	1
Fluorene	0.33	J	mg/kg	0.63	0.061	1
Phenanthrene	1.0		mg/kg	0.38	0.076	1
Anthracene	0.22	J	mg/kg	0.38	0.12	1
Pyrene	0.78		mg/kg	0.38	0.062	1
Benzo(a)anthracene	0.28	J	mg/kg	0.38	0.071	1
Chrysene	0.33	J	mg/kg	0.38	0.065	1
Benzo(b)fluoranthene	0.22	J	mg/kg	0.38	0.10	1
Benzo(a)pyrene	0.19	J	mg/kg	0.50	0.15	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.50	0.074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	95		30-120
4-Terphenyl-d14	91		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-13
Client ID: GPR-273-3-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 19:29
Analyst: ALS
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.17	0.10	1
Fluorene	0.90		mg/kg	0.83	0.081	1
Phenanthrene	3.0		mg/kg	0.50	0.10	1
Anthracene	0.77		mg/kg	0.50	0.16	1
Pyrene	1.9		mg/kg	0.50	0.083	1
Benzo(a)anthracene	1.1		mg/kg	0.50	0.094	1
Chrysene	1.0		mg/kg	0.50	0.087	1
Benzo(b)fluoranthene	0.92		mg/kg	0.50	0.14	1
Benzo(a)pyrene	0.90		mg/kg	0.67	0.20	1
Benzo(ghi)perylene	0.42	J	mg/kg	0.67	0.098	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-14
Client ID: GPR-273-2-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 19:54
Analyst: ALS
Percent Solids: 56%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.18	0.11	1
Fluorene	0.88	J	mg/kg	0.89	0.086	1
Phenanthrene	1.9		mg/kg	0.53	0.11	1
Anthracene	0.64		mg/kg	0.53	0.17	1
Pyrene	2.3		mg/kg	0.53	0.088	1
Benzo(a)anthracene	0.70		mg/kg	0.53	0.10	1
Chrysene	0.83		mg/kg	0.53	0.093	1
Benzo(b)fluoranthene	0.47	J	mg/kg	0.53	0.15	1
Benzo(a)pyrene	0.42	J	mg/kg	0.71	0.22	1
Benzo(ghi)perylene	0.21	J	mg/kg	0.71	0.10	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	88		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-15
Client ID: GPR-273-4-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/27/23 22:18
Analyst: ALS
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 06/23/23 20:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.4		mg/kg	0.18	0.11	1
Fluorene	1.4		mg/kg	0.88	0.086	1
Phenanthrene	4.8		mg/kg	0.53	0.11	1
Anthracene	1.4		mg/kg	0.53	0.17	1
Pyrene	2.2		mg/kg	0.53	0.088	1
Benzo(a)anthracene	0.94		mg/kg	0.53	0.099	1
Chrysene	1.1		mg/kg	0.53	0.092	1
Benzo(b)fluoranthene	0.72		mg/kg	0.53	0.15	1
Benzo(a)pyrene	0.77		mg/kg	0.70	0.22	1
Benzo(ghi)perylene	0.32	J	mg/kg	0.70	0.10	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-16
Client ID: GPR-273-1-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 20:18
Analyst: ALS
Percent Solids: 55%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.17	0.11	1
Fluorene	0.79	J	mg/kg	0.87	0.085	1
Phenanthrene	3.3		mg/kg	0.52	0.11	1
Anthracene	0.67		mg/kg	0.52	0.17	1
Pyrene	3.2		mg/kg	0.52	0.087	1
Benzo(a)anthracene	1.4		mg/kg	0.52	0.098	1
Chrysene	1.6		mg/kg	0.52	0.091	1
Benzo(b)fluoranthene	1.3		mg/kg	0.52	0.15	1
Benzo(a)pyrene	1.3		mg/kg	0.70	0.21	1
Benzo(ghi)perylene	0.72		mg/kg	0.70	0.10	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	83		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-17
Client ID: GPR-273-5-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 20:43
Analyst: ALS
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.7		mg/kg	0.13	0.079	1
Fluorene	0.15	J	mg/kg	0.65	0.063	1
Phenanthrene	0.45		mg/kg	0.39	0.079	1
Anthracene	0.18	J	mg/kg	0.39	0.13	1
Pyrene	0.25	J	mg/kg	0.39	0.065	1
Benzo(a)anthracene	0.12	J	mg/kg	0.39	0.073	1
Chrysene	0.15	J	mg/kg	0.39	0.068	1
Benzo(b)fluoranthene	0.15	J	mg/kg	0.39	0.11	1
Benzo(a)pyrene	ND		mg/kg	0.52	0.16	1
Benzo(ghi)perylene	0.22	J	mg/kg	0.52	0.076	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-18
Client ID: GPR-273-12-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 21:08
Analyst: ALS
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.5		mg/kg	0.15	0.093	1
Fluorene	0.57	J	mg/kg	0.76	0.074	1
Phenanthrene	1.9		mg/kg	0.46	0.093	1
Anthracene	0.58		mg/kg	0.46	0.15	1
Pyrene	2.1		mg/kg	0.46	0.076	1
Benzo(a)anthracene	0.66		mg/kg	0.46	0.086	1
Chrysene	0.89		mg/kg	0.46	0.079	1
Benzo(b)fluoranthene	0.76		mg/kg	0.46	0.13	1
Benzo(a)pyrene	0.75		mg/kg	0.61	0.18	1
Benzo(ghi)perylene	0.60	J	mg/kg	0.61	0.090	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	86		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-19
Client ID: GPR-273-13-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 21:33
Analyst: ALS
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.15	0.092	1
Fluorene	0.14	J	mg/kg	0.76	0.073	1
Phenanthrene	0.35	J	mg/kg	0.45	0.092	1
Anthracene	0.15	J	mg/kg	0.45	0.15	1
Pyrene	0.44	J	mg/kg	0.45	0.075	1
Benzo(a)anthracene	0.23	J	mg/kg	0.45	0.085	1
Chrysene	0.28	J	mg/kg	0.45	0.079	1
Benzo(b)fluoranthene	0.22	J	mg/kg	0.45	0.13	1
Benzo(a)pyrene	0.22	J	mg/kg	0.60	0.18	1
Benzo(ghi)perylene	0.18	J	mg/kg	0.60	0.089	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-20
Client ID: GPR-273-11-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 14:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 21:58
Analyst: ALS
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.75		mg/kg	0.15	0.094	1
Fluorene	ND		mg/kg	0.77	0.075	1
Phenanthrene	0.23	J	mg/kg	0.46	0.094	1
Anthracene	ND		mg/kg	0.46	0.15	1
Pyrene	0.35	J	mg/kg	0.46	0.077	1
Benzo(a)anthracene	0.35	J	mg/kg	0.46	0.087	1
Chrysene	0.36	J	mg/kg	0.46	0.080	1
Benzo(b)fluoranthene	0.48		mg/kg	0.46	0.13	1
Benzo(a)pyrene	0.42	J	mg/kg	0.62	0.19	1
Benzo(ghi)perylene	0.28	J	mg/kg	0.62	0.091	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-21
Client ID: GPR-273-14-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 22:22
Analyst: ALS
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.8		mg/kg	0.13	0.079	1
Fluorene	0.17	J	mg/kg	0.65	0.063	1
Phenanthrene	0.50		mg/kg	0.39	0.078	1
Anthracene	0.20	J	mg/kg	0.39	0.12	1
Pyrene	0.48		mg/kg	0.39	0.064	1
Benzo(a)anthracene	0.21	J	mg/kg	0.39	0.073	1
Chrysene	0.27	J	mg/kg	0.39	0.067	1
Benzo(b)fluoranthene	0.25	J	mg/kg	0.39	0.11	1
Benzo(a)pyrene	0.22	J	mg/kg	0.52	0.16	1
Benzo(ghi)perylene	0.16	J	mg/kg	0.52	0.076	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-22
Client ID: GPR-273-9-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 22:47
Analyst: ALS
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.7		mg/kg	0.12	0.070	1
Fluorene	0.11	J	mg/kg	0.58	0.056	1
Phenanthrene	0.57		mg/kg	0.34	0.070	1
Anthracene	0.28	J	mg/kg	0.34	0.11	1
Pyrene	0.62		mg/kg	0.34	0.057	1
Benzo(a)anthracene	0.53		mg/kg	0.34	0.065	1
Chrysene	0.57		mg/kg	0.34	0.060	1
Benzo(b)fluoranthene	0.73		mg/kg	0.34	0.097	1
Benzo(a)pyrene	0.66		mg/kg	0.46	0.14	1
Benzo(ghi)perylene	0.67		mg/kg	0.46	0.068	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-23
Client ID: DUP-56
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 15:20
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/23 23:12
Analyst: ALS
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.76		mg/kg	0.053	0.032	1
Fluorene	0.50		mg/kg	0.27	0.026	1
Phenanthrene	1.5		mg/kg	0.16	0.032	1
Anthracene	0.35		mg/kg	0.16	0.052	1
Pyrene	0.81		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.36		mg/kg	0.16	0.030	1
Chrysene	0.37		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.26		mg/kg	0.16	0.045	1
Benzo(a)pyrene	0.25		mg/kg	0.21	0.065	1
Benzo(ghi)perylene	0.13	J	mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-24
Client ID: FB062023
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 06/26/23 17:55
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/23 15:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	51		15-120
4-Terphenyl-d14	54		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/23/23 13:40
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 06/22/23 21:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-08,10,12-14,16-23 Batch: WG1795081-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.019
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	96		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/27/23 12:18
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 06/23/23 18:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09,11,15 Batch: WG1795528-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	93		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 06/26/23 17:38
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/23 15:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 24 Batch: WG1795773-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	56		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08,10,12-14,16-23 Batch: WG1795081-2 WG1795081-3								
Naphthalene	89		88		40-140	1		50
Fluorene	98		97		40-140	1		50
Phenanthrene	98		98		40-140	0		50
Anthracene	100		99		40-140	1		50
Pyrene	96		98		35-142	2		50
Benzo(a)anthracene	98		99		40-140	1		50
Chrysene	98		98		40-140	0		50
Benzo(b)fluoranthene	94		99		40-140	5		50
Benzo(a)pyrene	97		99		40-140	2		50
Indeno(1,2,3-cd)pyrene	106		109		40-140	3		50
Benzo(ghi)perylene	98		102		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	77		82		23-120
2-Fluorobiphenyl	95		93		30-120
4-Terphenyl-d14	96		96		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09,11,15 Batch: WG1795528-2 WG1795528-3								
Naphthalene	81		84		40-140	4		50
Fluorene	87		88		40-140	1		50
Phenanthrene	90		91		40-140	1		50
Anthracene	92		92		40-140	0		50
Pyrene	88		90		35-142	2		50
Benzo(a)anthracene	83		85		40-140	2		50
Chrysene	90		93		40-140	3		50
Benzo(b)fluoranthene	91		94		40-140	3		50
Benzo(a)pyrene	98		103		40-140	5		50
Indeno(1,2,3-cd)pyrene	90		93		40-140	3		50
Benzo(ghi)perylene	89		92		40-140	3		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	89		96		23-120
2-Fluorobiphenyl	81		86		30-120
4-Terphenyl-d14	89		94		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 24 Batch: WG1795773-2 WG1795773-3								
Naphthalene	66		58		40-140	13		40
Fluorene	73		65		40-140	12		40
Phenanthrene	66		60		40-140	10		40
Anthracene	72		65		40-140	10		40
Pyrene	72		66		26-127	9		40
Benzo(a)anthracene	77		70		40-140	10		40
Chrysene	70		65		40-140	7		40
Benzo(b)fluoranthene	76		70		40-140	8		40
Benzo(a)pyrene	82		75		40-140	9		40
Benzo(ghi)perylene	80		72		40-140	11		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	89		81		23-120
2-Fluorobiphenyl	68		61		15-120
4-Terphenyl-d14	62		57		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-01
Client ID: GPR-272-15-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 07:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	235		mg/kg	2.93	0.157	1	06/28/23 11:23	07/06/23 10:03	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-02
Client ID: GPR-272-14-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:05
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	271		mg/kg	2.39	0.128	1	06/28/23 11:23	07/06/23 09:48	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-03
Client ID: GPR-272-13-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	210		mg/kg	2.85	0.153	1	06/28/23 11:23	07/06/23 09:53	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-04
Client ID: GPR-272-12-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	393		mg/kg	3.31	0.178	1	06/28/23 11:23	07/06/23 09:58	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-05
Client ID: GPR-272-5-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	438		mg/kg	2.51	0.134	1	06/28/23 11:23	07/06/23 10:37	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-06
Client ID: GPR-272-4-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:45
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	275		mg/kg	2.66	0.143	1	06/28/23 11:23	07/06/23 10:41	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-07
Client ID: GPR-272-9-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 08:55
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	101		mg/kg	2.69	0.144	1	06/28/23 11:23	07/06/23 10:46	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-08
Client ID: GPR-272-3-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	273		mg/kg	3.01	0.161	1	06/28/23 11:23	07/06/23 10:51	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-09
Client ID: GPR-272-2-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	145		mg/kg	2.64	0.142	1	06/28/23 11:23	07/06/23 10:55	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-10
Client ID: GPR-272-1-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 12:30
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	164		mg/kg	2.86	0.154	1	06/28/23 11:23	07/06/23 11:00	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-11
Client ID: GPR-273-8-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	410		mg/kg	3.20	0.172	1	06/28/23 11:23	07/06/23 11:05	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-12
Client ID: GPR-273-7-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 13:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	186		mg/kg	2.54	0.136	1	06/28/23 11:23	07/06/23 11:10	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-13
Client ID: GPR-273-3-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	157		mg/kg	3.45	0.185	1	06/28/23 11:23	07/06/23 11:14	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-14
Client ID: GPR-273-2-SS01
Sample Location: PHILADELPHIA PA

Date Collected: 06/20/23 13:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	377		mg/kg	3.49	0.187	1	06/28/23 11:23	07/06/23 11:19	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-15
Client ID: GPR-273-4-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	205		mg/kg	3.73	0.200	1	06/28/23 11:23	07/06/23 12:21	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-16
Client ID: GPR-273-1-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 55%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	272		mg/kg	3.53	0.189	1	06/28/23 11:23	07/06/23 12:25	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-17
Client ID: GPR-273-5-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:15
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	480		mg/kg	2.67	0.143	1	06/28/23 11:23	07/06/23 12:30	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-18
Client ID: GPR-273-12-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:25
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	429		mg/kg	3.07	0.165	1	06/28/23 11:23	07/06/23 12:35	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-19
Client ID: GPR-273-13-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:35
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	401		mg/kg	2.93	0.157	1	06/28/23 11:23	07/06/23 12:40	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-20
Client ID: GPR-273-11-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 14:40
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	410		mg/kg	2.99	0.160	1	06/28/23 11:23	07/06/23 12:44	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-21
Client ID: GPR-273-14-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 15:00
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	329		mg/kg	2.64	0.141	1	06/28/23 06:30	07/05/23 13:31	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-22
Client ID: GPR-273-9-SS01
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 15:10
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	293		mg/kg	2.32	0.124	1	06/28/23 06:30	07/05/23 13:34	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-23
Client ID: DUP-56
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 15:20
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	154		mg/kg	3.18	0.170	1	06/28/23 06:30	07/05/23 13:37	EPA 3050B	1,6010D	MRC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2335425
Project Number: 200.00135.014.03
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-24
Client ID: FB062023
Sample Location: PHILADELPHIA PA
Date Collected: 06/20/23 12:50
Date Received: 06/21/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	06/29/23 23:00	07/06/23 10:22	EPA 3005A	1,6020B	EJF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-20 Batch: WG1796981-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	06/28/23 11:23	07/06/23 09:39	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21-23 Batch: WG1796982-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	06/28/23 06:30	06/29/23 10:28	1,6010D	DHL

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 24 Batch: WG1797354-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	06/29/23 23:00	07/06/23 10:17	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 Batch: WG1796981-2 SRM Lot Number: D119-540								
Lead, Total	101		-		82-118	-		
Total Metals - Mansfield Lab Associated sample(s): 21-23 Batch: WG1796982-2 SRM Lot Number: D119-540								
Lead, Total	104		-		82-118	-		
Total Metals - Mansfield Lab Associated sample(s): 24 Batch: WG1797354-2								
Lead, Total	108		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1796981-3 QC Sample: L2335425-01 Client ID: GPR-272-15-SS01												
Lead, Total	235	60.2	250	**25**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21-23 QC Batch ID: WG1796982-3 QC Sample: L2334602-01 Client ID: MS Sample												
Lead, Total	2.76J	41.9	49.2	117		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 24 QC Batch ID: WG1797354-3 QC Sample: L2336639-01 Client ID: MS Sample												
Lead, Total	3.146	530	569.7	107		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG1796981-4 QC Sample: L2335425-01 Client ID: GPR-272-15-SS01						
Lead, Total	235	226	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 21-23 QC Batch ID: WG1796982-4 QC Sample: L2334602-01 Client ID: DUP Sample						
Lead, Total	2.76J	3.20J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-01
Client ID: GPR-272-15-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 07:55
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.8		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-02
Client ID: GPR-272-14-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:05
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.7		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-03
Client ID: GPR-272-13-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:15
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.2		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-04
Client ID: GPR-272-12-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:25
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.1		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-05
Client ID: GPR-272-5-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:35
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.0		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-06
Client ID: GPR-272-4-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:45
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.3		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-07
Client ID: GPR-272-9-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 08:55
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.3		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-08
Client ID: GPR-272-3-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 12:10
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.4		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-09
Client ID: GPR-272-2-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 12:15
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.7		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-10
Client ID: GPR-272-1-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 12:30
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.2		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-11
Client ID: GPR-273-8-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 13:10
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.4		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-12
Client ID: GPR-273-7-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 13:25
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.9		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-13
Client ID: GPR-273-3-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 13:40
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.9		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-14
Client ID: GPR-273-2-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 13:50
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	55.7		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-15
Client ID: GPR-273-4-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:00
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	52.7		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-16
Client ID: GPR-273-1-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:10
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	55.2		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-17
Client ID: GPR-273-5-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:15
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.6		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-18
Client ID: GPR-273-12-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:25
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.4		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-19
Client ID: GPR-273-13-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:35
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.5		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-20
Client ID: GPR-273-11-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 14:40
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.8		%	0.100	NA	1	-	06/22/23 10:13	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-21
Client ID: GPR-273-14-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 15:00
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.2		%	0.100	NA	1	-	06/22/23 10:27	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-22
Client ID: GPR-273-9-SS01
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 15:10
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	06/22/23 10:27	121,2540G	ROI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03
Lab Number: L2335425
Report Date: 07/07/23

SAMPLE RESULTS

Lab ID: L2335425-23
Client ID: DUP-56
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Soil

Date Collected: 06/20/23 15:20
Date Received: 06/21/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	61.6		%	0.100	NA	1	-	06/22/23 10:27	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.014.03

Lab Number: L2335425

Report Date: 07/07/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-20 QC Batch ID: WG1794625-1 QC Sample: L2335425-01 Client ID: GPR-272-15-SS01						
Solids, Total	66.8	69.8	%	4		20
General Chemistry - Westborough Lab Associated sample(s): 21-23 QC Batch ID: WG1794626-1 QC Sample: L2335278-01 Client ID: DUP Sample						
Solids, Total	79.4	79.2	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-01A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2335425-01B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-01C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-01D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-01F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-02A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-02B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-02C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-02D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-02E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-02F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-03A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-03B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-03C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-03D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-03E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-03F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-04A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-04B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-04C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-04D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-04F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-05A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-05B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-05C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-05D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-05F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-06A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2335425-06B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-06C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-06D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-06F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-07A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2335425-07B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-07C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-07D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-07F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-08A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2335425-08B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-08C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-08D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-08F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-09A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-09B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-09C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-09D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-09F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-10A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2335425-10B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-10C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-10D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2335425-10F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-11A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-11B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-11C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-11D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-11E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-11F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-12A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-12B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-12C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-12D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-12F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-13A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-13B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-13C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-13D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-13E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-13F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-14A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-14B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-14C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-14D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-14E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-14F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-15A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-15B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-15C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-15D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-15E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-15F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-16A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2335425-16B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260H(14),PA-8260HLW(14)
L2335425-16C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260H(14),PA-8260HLW(14)
L2335425-16D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-16E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-16F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-17A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-17B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-17C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-17D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-17E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-17F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-18A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-18B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-18C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-18D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-18E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-18F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-19A	Vial MeOH preserved	C	NA		2.5	Y	Absent		PA-8260HLW(14)
L2335425-19B	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-19C	Vial water preserved	C	NA		2.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-19D	Plastic 120ml unpreserved	C	NA		2.5	Y	Absent		TS(7)
L2335425-19E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.5	Y	Absent		PB-TI(180)
L2335425-19F	Glass 120ml/4oz unpreserved	C	NA		2.5	Y	Absent		PA-PAH(14)
L2335425-20A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-20B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-20C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-20D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-20E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-20F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-21A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-21B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-21C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-21D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-21E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-21F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-22A	Vial MeOH preserved	B	NA		4.5	Y	Absent		PA-8260HLW(14)
L2335425-22B	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-22C	Vial water preserved	B	NA		4.5	Y	Absent	22-JUN-23 02:27	PA-8260HLW(14)
L2335425-22D	Plastic 120ml unpreserved	B	NA		4.5	Y	Absent		TS(7)
L2335425-22E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		PB-TI(180)
L2335425-22F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		PA-PAH(14)
L2335425-23A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.014.03

Lab Number: L2335425
Report Date: 07/07/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2335425-23B	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260H(14),PA-8260HLW(14)
L2335425-23C	Vial water preserved	A	NA		3.2	Y	Absent	22-JUN-23 02:27	PA-8260H(14),PA-8260HLW(14)
L2335425-23D	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2335425-23E	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180),PA-PAH(14)
L2335425-23F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2335425-24A	Vial HCl preserved	A	NA		3.2	Y	Absent		PA-8260(14)
L2335425-24B	Vial HCl preserved	A	NA		3.2	Y	Absent		PA-8260(14)
L2335425-24C	Vial HCl preserved	A	NA		3.2	Y	Absent		PA-8260(14)
L2335425-24D	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		8011(14)
L2335425-24E	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		8011(14)
L2335425-24F	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		PA-PAHSIM-LVI(7)
L2335425-24G	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		PA-PAHSIM-LVI(7)
L2335425-24H	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		PB-6020T-PPB(180)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2335425
Project Number:	200.00135.014.03	**Report Date:**	07/07/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 6/21/23

ALPHA Job #: L2335425

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Ave
Hamilton NJ 08619
Phone: 609-901-4974
Fax:
Email: William.schmidt@ransom.env.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia PA
Project #: 200.0135.014.03
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
*Report only project specific analyte list #1 of PADEP tested/untested gasoline + NC 2,4,5+6 fuel oil Shortlist. Run naphthalene using Method 8270 Only! Email Results to edd@turnaround.com, William.Schmidt@ransom.com + Darcy@Hilcogroup.com

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: PADEP Short List #1	PADEP Short List #2	Lead	SAMPLE HANDLING	TOTAL # BOTTLES
35425-01	GPR-272-15	6/21/23	7:55	S	CO	✓		✓		
-02	GPR-272-14		8:05			✓		✓		
-03	GPR-272-13		8:15			✓		✓		
-04	GPR-272-12		8:25			✓		✓		
-05	GPR-272-5		8:35			✓		✓		
-06	GPR-272-4		8:45			✓		✓		
-07	GPR-272-9		8:55			✓		✓		
-08	GPR-272-3		12:10			✓		✓		
-09	GPR-272-2		12:15			✓		✓		
-10	GPR-272-1		12:30			✓		✓		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Container Type	G	G	G																	
Preservative	C	A	A																	

Relinquished By:	Date/Time	Received By	Date/Time
	6/21/23 1600		6/21/23
	6/21/23 1330	Paul Mazzella	6/21/23 1600

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 6/21/23

ALPHA Job #: L2335425

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Ave
Hamilton NJ 08619
Phone: 609-901-4974
Fax:
Email: william.schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 208.00135.014.03
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
See pg 1 of 3 of COC for Project Specific Requirements ***

ANALYSIS: PAPEP short list 1-5 lead

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
35425-11	GPR-273-8	6/20/23	1310	S	CO		
-12	GPR-273-7		1325				
-13	GPR-273-3		1340				
-14	GPR-273-2		1350				
-15	GPR-273-4		1400				
-16	GPR-273-1		1410				
-17	GPR-273-5		1415				
-18	GPR-273-12		1425				
-19	GPR-273-13		1435				
-20	GPR-273-11		1440				

Container Type	G	G
Preservative	F	A

Relinquished By:	Date/Time	Received By:	Date/Time
	6/20/23 1600		6/21/23
	6/21/23 1350	Paul Mazzella	6/21/23 1000
Paul Mazzella	6/21/23		6/21/23 2010

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 6/21/23

ALPHA Job #: L2335425

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Ave
Hamilton NJ 08619
Phone: 609-901-4974
Fax:
Email: William.Schmidt@ransom.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.014.03
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
see pg 1 of 3 of COC for project specific Requirements # # #

1-5

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: PA DEP Soil List lead	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do; Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
35425-21	GPR-273-14	6/20/23	1500	S	CO	✓	✓		
-22	GPR-273-9	↓	1510	↓	↓	✓	✓		
-23	Dup-56	↓	1520	↓	↓	✓			
-24	FB062023	↓	1250	ow	↓	✓			

Container Type	G	G
Preservative	F	A

Relinquished By:	Date/Time	Received By:	Date/Time
	6/20/23/1600		6/21/23 8:25
	6/21/23 1334	Paul Maggella	6/21/23/1334
D. O'Mahoney	6/21/23		

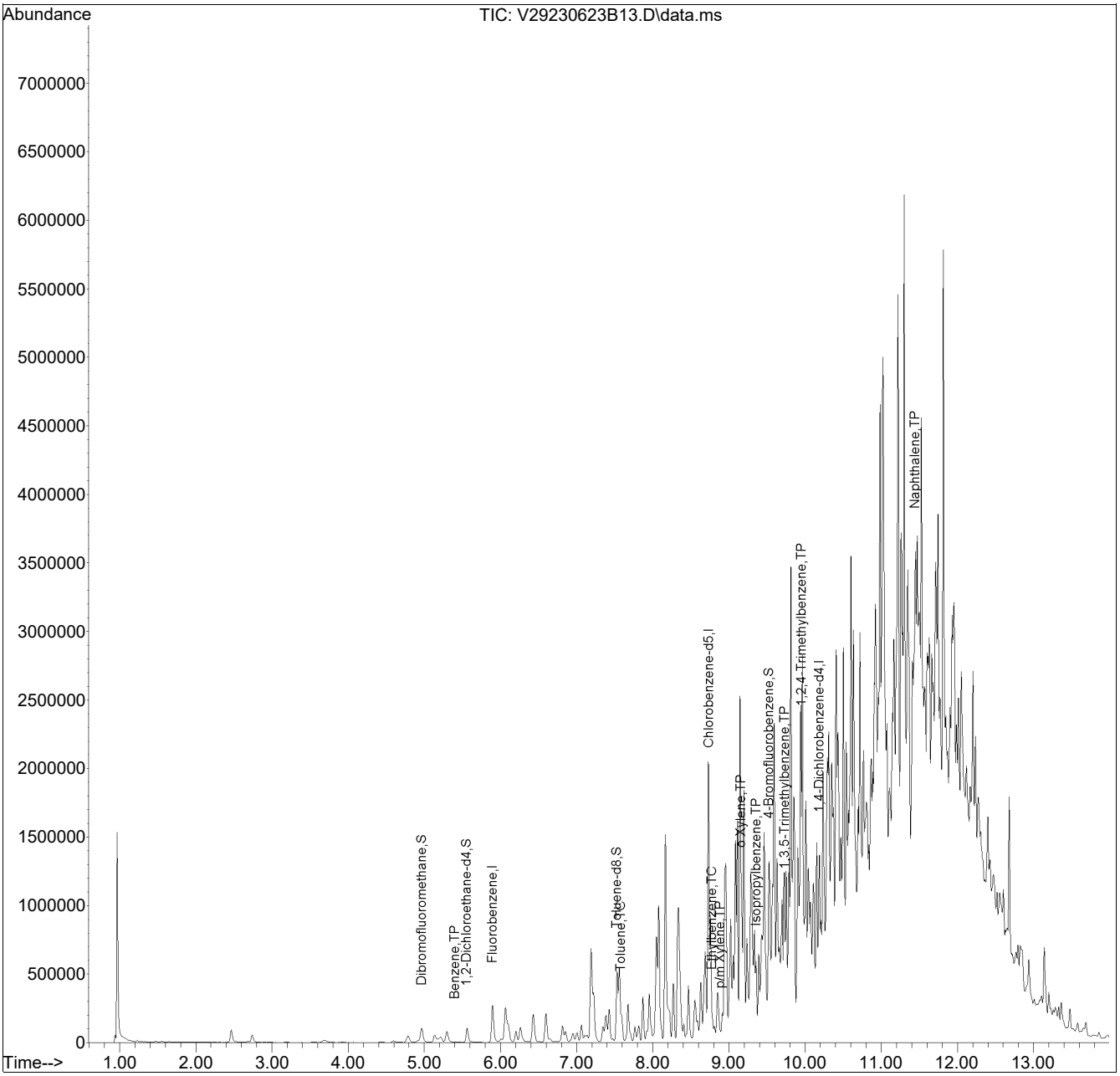
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B13.D
Acq On : 23 Jun 2023 05:08 pm
Operator : VOA129:AJK
Sample : L2335425-01,31,4.90,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 26 10:04:10 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

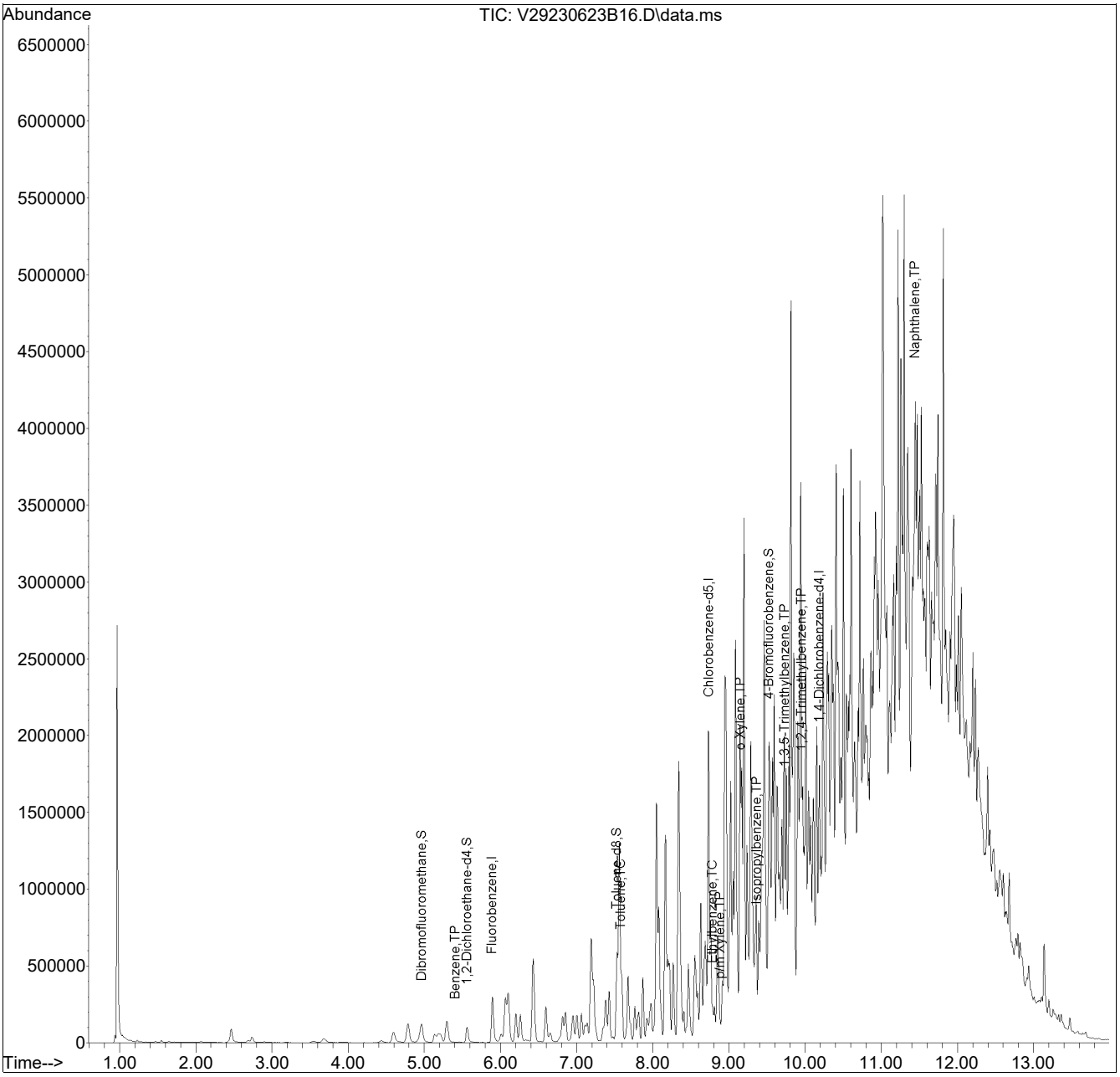


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B16.D
Acq On : 23 Jun 2023 06:10 pm
Operator : VOA129:AJK
Sample : L2335425-07,31,5.06,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 26 08:06:28 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

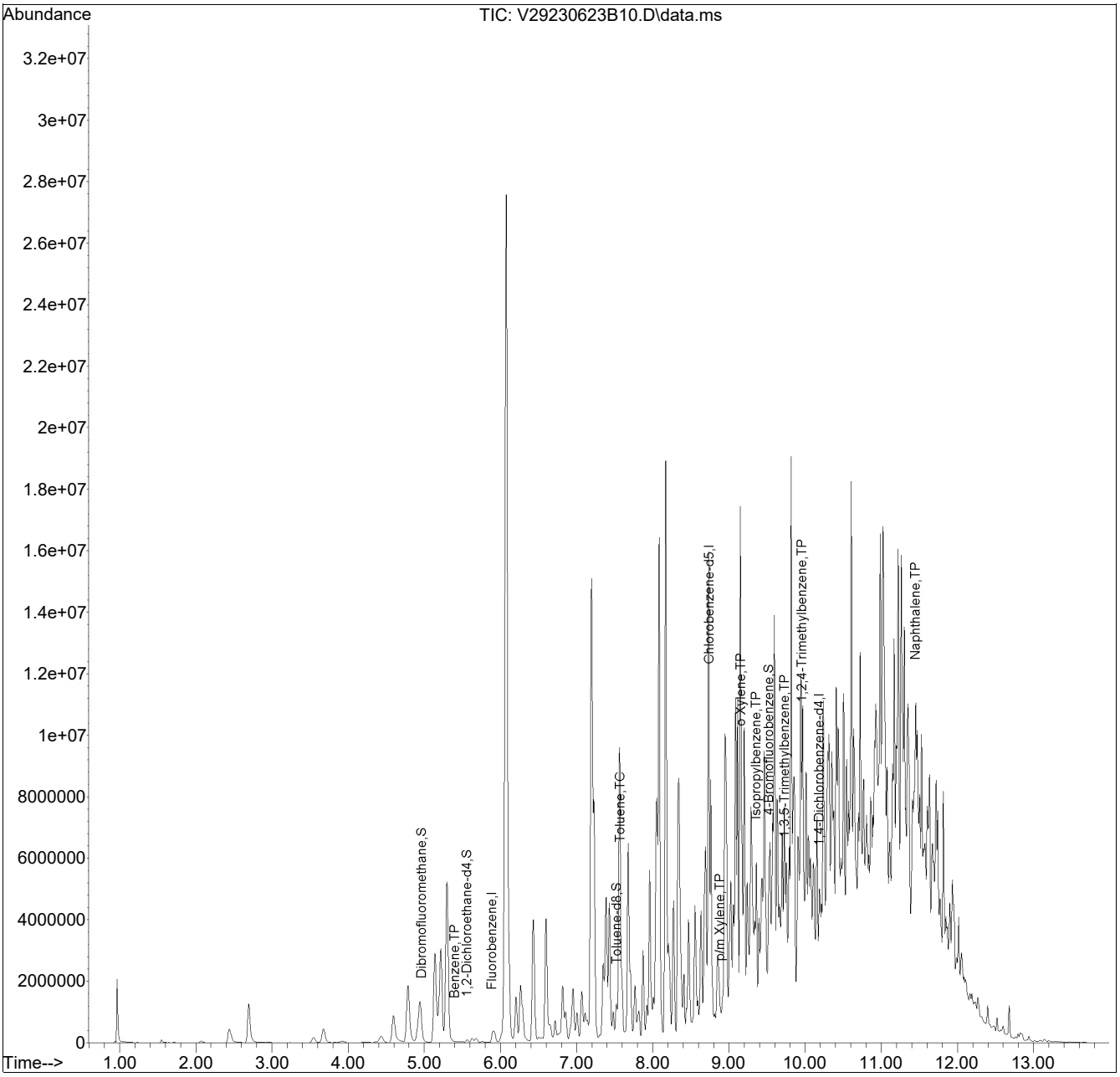


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B10.D
Acq On : 23 Jun 2023 04:05 pm
Operator : VOA129:AJK
Sample : L2335425-10,31,5.20,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 26 10:03:04 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

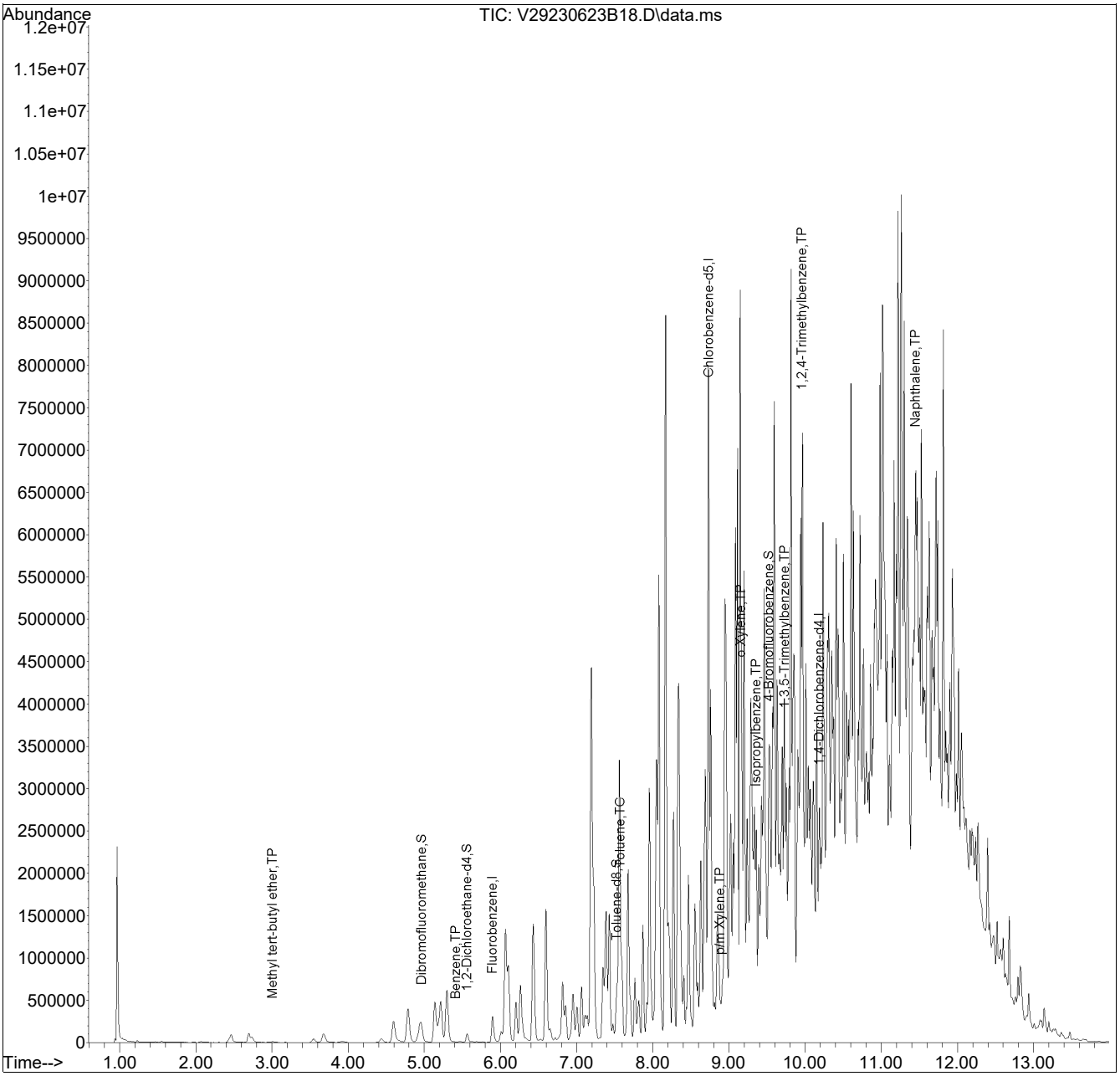


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B18.D
Acq On : 23 Jun 2023 06:51 pm
Operator : VOA129:AJK
Sample : L2335425-11,31,4.94,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 26 10:05:18 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

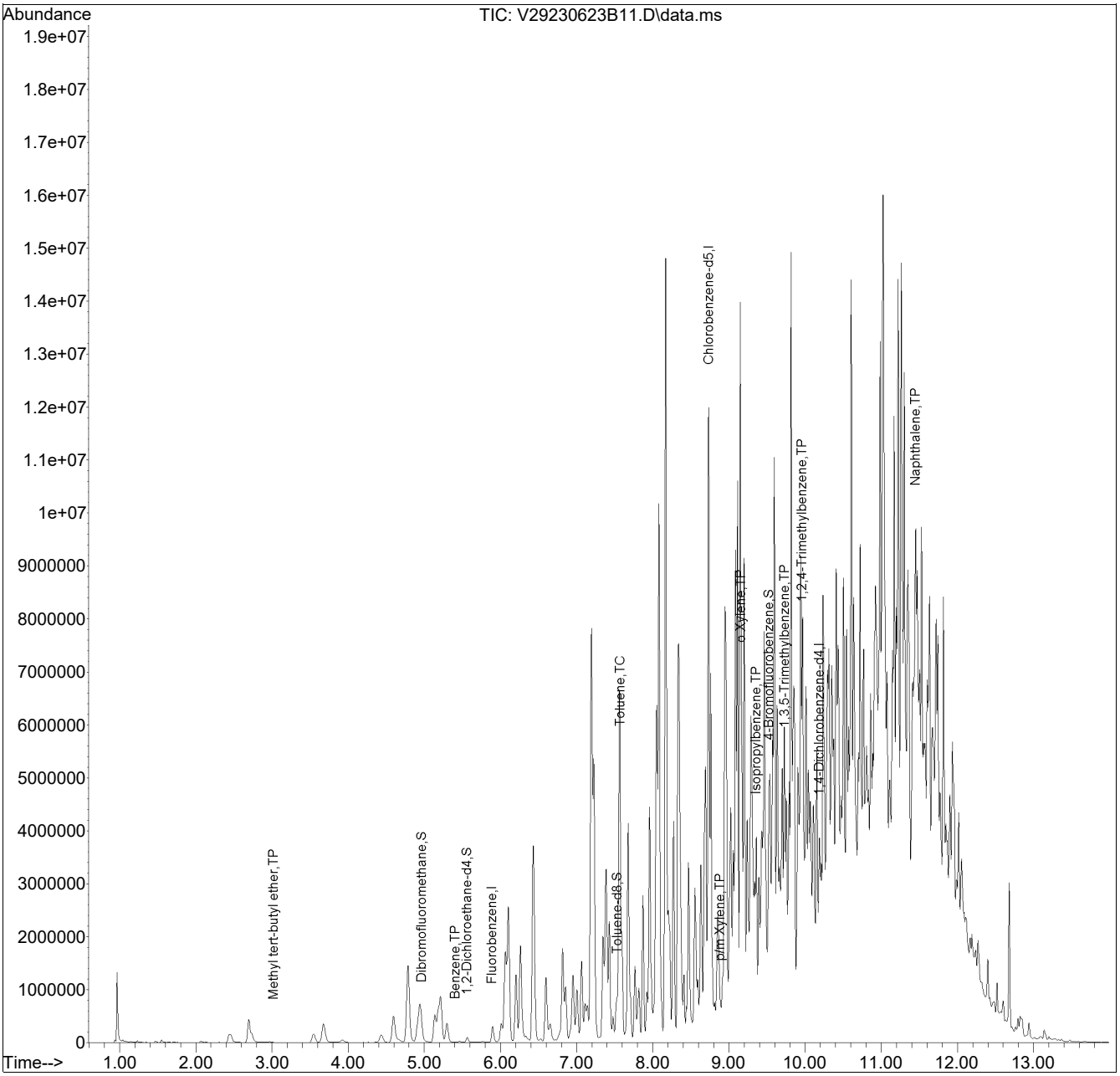


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B11.D
Acq On : 23 Jun 2023 04:26 pm
Operator : VOA129:AJK
Sample : L2335425-12,31,4.75,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 26 10:03:28 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

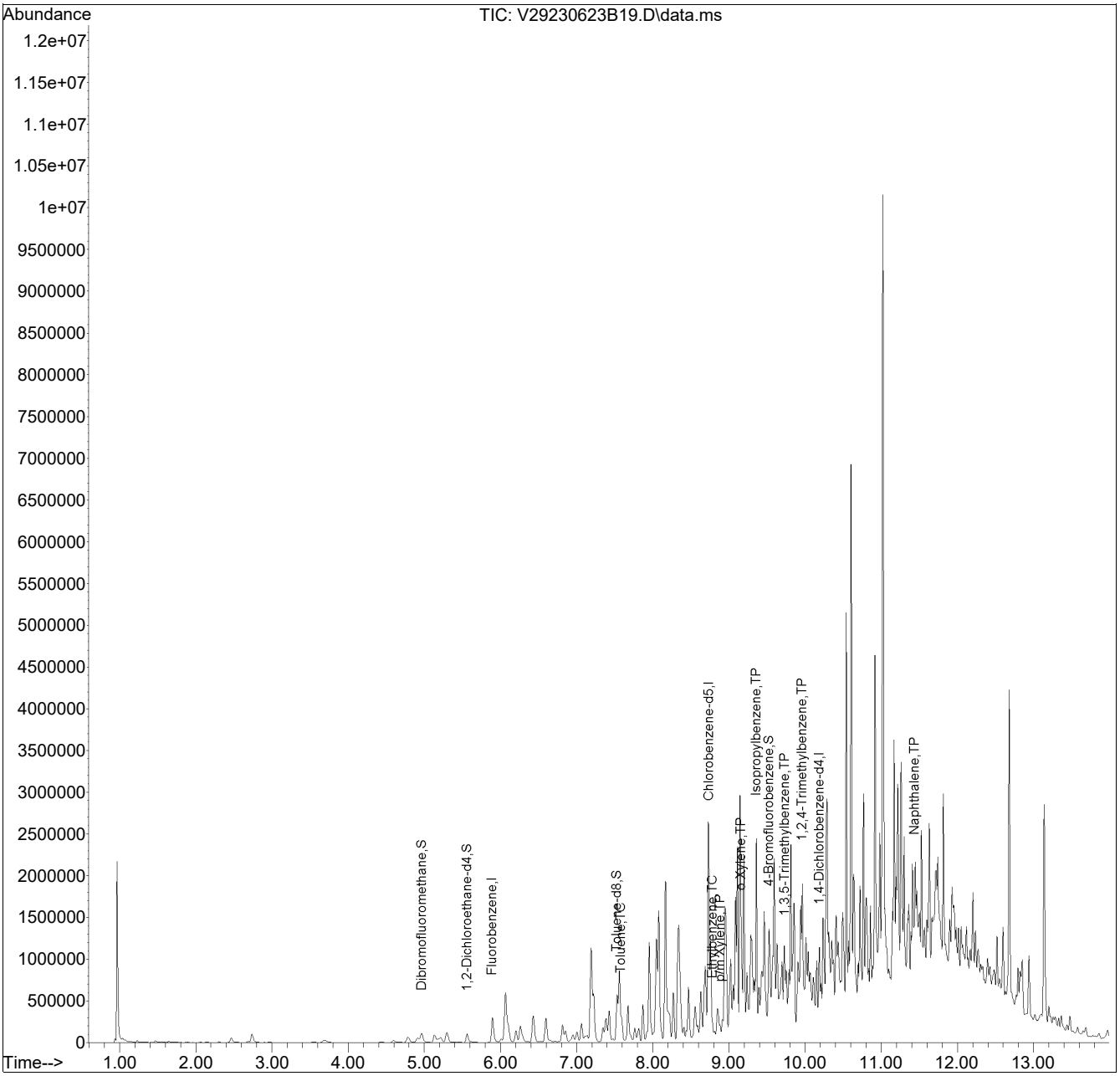


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B19.D
Acq On : 23 Jun 2023 07:12 pm
Operator : VOA129:AJK
Sample : L2335425-13,31,4.47,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 26 08:06:44 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

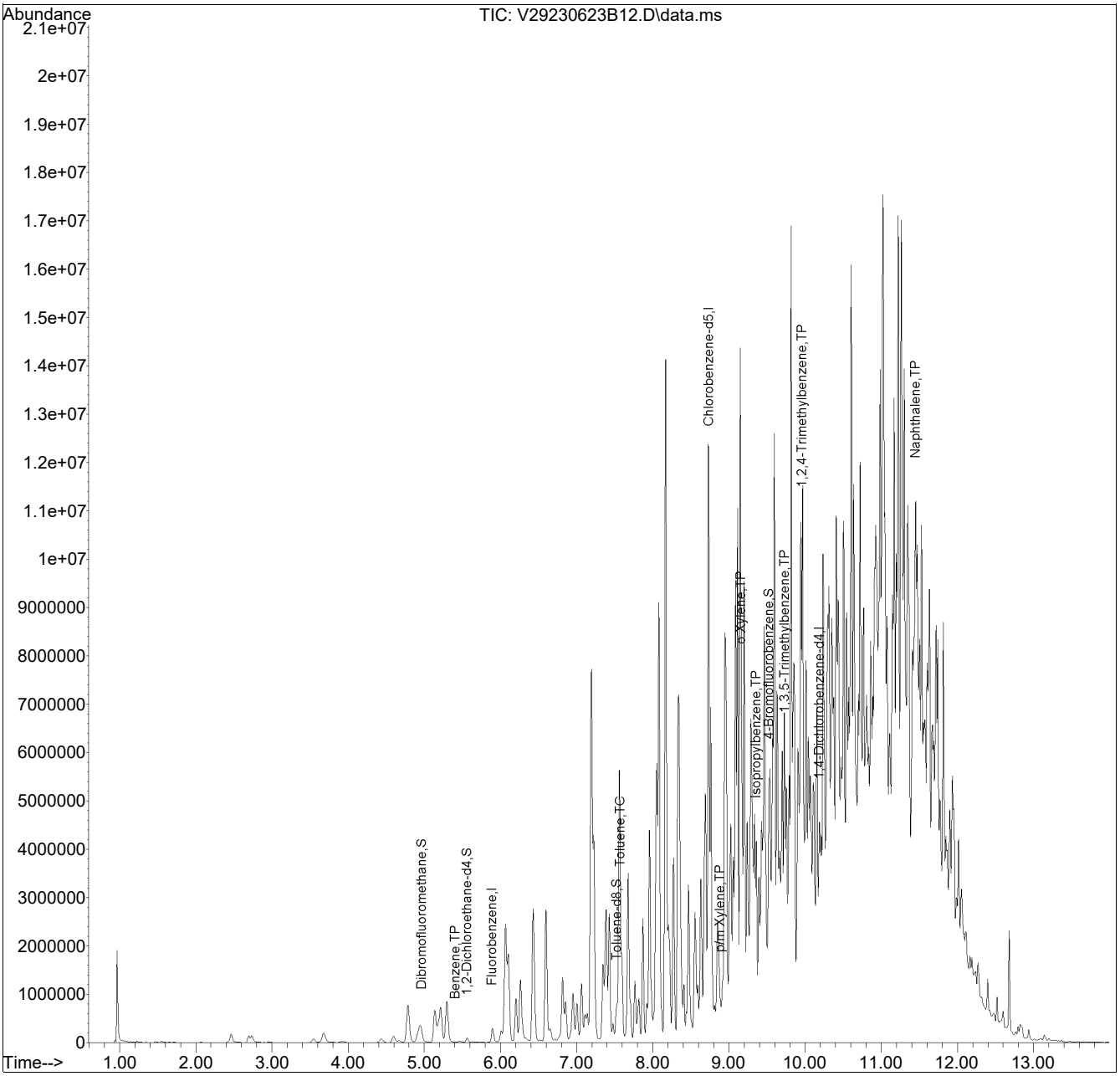


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B12.D
Acq On : 23 Jun 2023 04:47 pm
Operator : VOA129:AJK
Sample : L2335425-14,31,4.56,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 26 10:03:49 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•

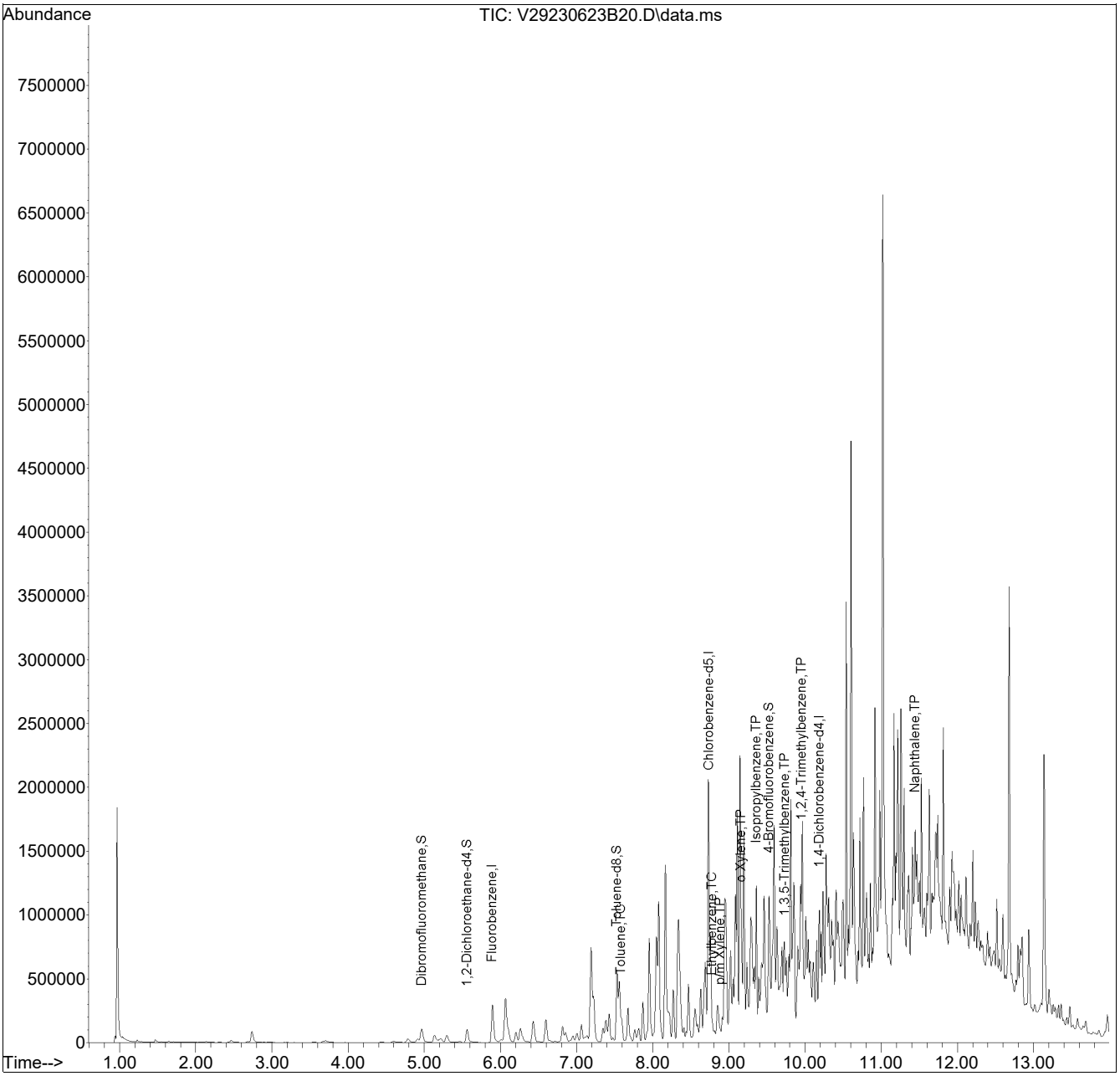


Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B20.D
Acq On : 23 Jun 2023 07:33 pm
Operator : VOA129:AJK
Sample : L2335425-15,31,4.52,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 26 08:06:49 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•



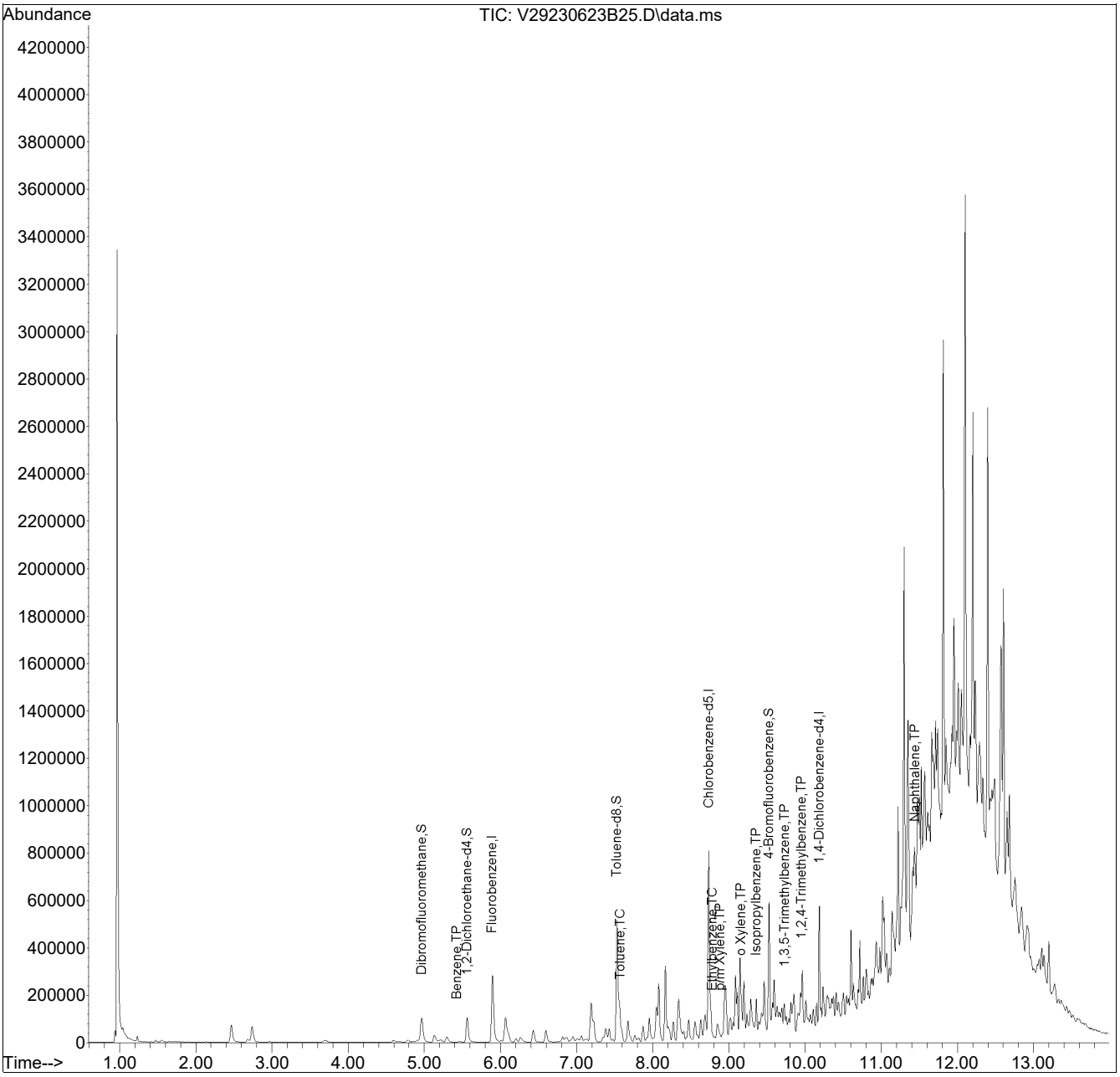
V129_230308N_8260.m Mon Jun 26 11:31:58 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : K:\VOA129\2023\230623B\
Data File : V29230623B25.D
Acq On : 23 Jun 2023 09:17 pm
Operator : VOA129:AJK
Sample : L2335425-19,31,4.87,5,,B
Misc : WG1796127,ICAL19799
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 26 08:07:14 2023
Quant Method : K:\VOA129\2023\230623B\V129_230308N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Mar 09 17:16:29 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list623B01.D•



ANALYTICAL REPORT

Lab Number:	L2370407
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	Not Specified
Report Date:	12/08/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2370407-01	GPR285-17-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 09:45	11/29/23
L2370407-02	GPR285-17-3.0-3.5	SOIL	PHILADELPHIA PA	11/29/23 10:00	11/29/23
L2370407-03	GPR285-15-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 10:30	11/29/23
L2370407-04	GPR285-15-6.0-6.5	SOIL	PHILADELPHIA PA	11/29/23 10:45	11/29/23
L2370407-05	GPR285-15-6.5-7.0	SOIL	PHILADELPHIA PA	11/29/23 11:10	11/29/23
L2370407-06	GPR285-14-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 11:30	11/29/23
L2370407-07	GPR285-14-5.0-5.5	SOIL	PHILADELPHIA PA	11/29/23 11:45	11/29/23
L2370407-08	GPR285-14-6.0-6.5	SOIL	PHILADELPHIA PA	11/29/23 12:10	11/29/23
L2370407-09	GPR285-09-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 12:50	11/29/23
L2370407-10	GPR285-09-2.0-2.5	SOIL	PHILADELPHIA PA	11/29/23 13:15	11/29/23
L2370407-11	TG06-MW04-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 13:40	11/29/23
L2370407-12	TG06-MW04-2.0-2.5	SOIL	PHILADELPHIA PA	11/29/23 14:00	11/29/23
L2370407-13	TG06-MW04-5.0-5.5	SOIL	PHILADELPHIA PA	11/29/23 14:20	11/29/23
L2370407-14	TG06-MW04-9.5-10.0	SOIL	PHILADELPHIA PA	11/29/23 14:40	11/29/23
L2370407-15	GPR285-16-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 15:00	11/29/23
L2370407-16	GPR285-16-3.0-3.5	SOIL	PHILADELPHIA PA	11/29/23 15:15	11/29/23
L2370407-17	GPR286-18-0.5-1.0	SOIL	PHILADELPHIA PA	11/29/23 15:25	11/29/23
L2370407-18	GPR286-18-3.0-3.5	SOIL	PHILADELPHIA PA	11/29/23 15:35	11/29/23
L2370407-19	FB-231129	WATER	PHILADELPHIA PA	11/29/23 15:45	11/29/23
L2370407-20	TB-231129	WATER	PHILADELPHIA PA	11/29/23 00:00	11/29/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

Case Narrative (continued)

Report Submission

December 08, 2023: This final report includes the results of all requested analyses.

December 06, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

All Client IDs were changed at the client's request.

L2370407-09: At the client's request, the analyses of Volatile Organics, Semivolatile Organics, and Total Metals were placed on hold.

L2370407-19 and -20: The analyses performed were specified by the client.

L2370407-20: Headspace was noted in the sample containers submitted for Volatile Organics and Microextractables.

Volatile Organics

L2370407-04: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (142%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370407-05: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (260%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370407-08: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (141%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370407-13: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (158%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
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Case Narrative (continued)

chromatogram is included as an attachment to this report.

Microextractables

L2370407-19 and -20: The sample containers were preserved with HCl.

Semivolatile Organics

L2370407-04D: The sample has elevated detection limits due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 12/08/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-02
Client ID: GPR285-17-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 14:24
Analyst: SLS
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	ND		mg/kg	0.0016	0.00048	1
Xylenes, Total	ND		mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-03
Client ID: GPR285-15-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 14:50
Analyst: SLS
Percent Solids: 61%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00097	1
o-Xylene	ND		mg/kg	0.0017	0.00050	1
Xylenes, Total	ND		mg/kg	0.0017	0.00050	1
Isopropylbenzene	0.00054	J	mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-04
Client ID: GPR285-15-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 15:16
Analyst: SLS
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00032	1
Toluene	ND		mg/kg	0.0013	0.00069	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00071	1
o-Xylene	0.00041	J	mg/kg	0.0013	0.00037	1
Xylenes, Total	0.00041	J	mg/kg	0.0013	0.00037	1
Isopropylbenzene	0.00077	J	mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.00033	J	mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.00062	J	mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	**142**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-05
Client ID: GPR285-15-6.5-7.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 09:15
Analyst: AJK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	0.00094	J	mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	0.00035	J	mg/kg	0.0016	0.00023	1
p/m-Xylene	0.0016	J	mg/kg	0.0033	0.00092	1
o-Xylene	0.0028		mg/kg	0.0016	0.00048	1
Xylenes, Total	0.0044	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.0053		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.0014	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0037		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	130		70-130
4-Bromofluorobenzene	**260**	Q	70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-06
Client ID: GPR285-14-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 15:42
Analyst: SLS
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	0.00041	J	mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00078	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0029	0.00080	1
o-Xylene	ND		mg/kg	0.0014	0.00042	1
Xylenes, Total	ND		mg/kg	0.0014	0.00042	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-07
Client ID: GPR285-14-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 16:09
Analyst: SLS
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	0.0057		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00043	1
Toluene	ND		mg/kg	0.0016	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00049	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	0.00049	J	mg/kg	0.0016	0.00048	1
Xylenes, Total	0.00049	J	mg/kg	0.0016	0.00048	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-08
Client ID: GPR285-14-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 12:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 16:35
Analyst: SLS
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	ND		mg/kg	0.00093	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00093	0.00054	1
Ethylbenzene	ND		mg/kg	0.0019	0.00026	1
p/m-Xylene	ND		mg/kg	0.0037	0.0010	1
o-Xylene	0.00070	J	mg/kg	0.0019	0.00054	1
Xylenes, Total	0.00070	J	mg/kg	0.0019	0.00054	1
Isopropylbenzene	0.00045	J	mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.00081	J	mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	**141**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-10
Client ID: GPR285-09-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 17:28
Analyst: SLS
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00030	1
Benzene	ND		mg/kg	0.00074	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	ND		mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0029	0.00082	1
o-Xylene	ND		mg/kg	0.0015	0.00043	1
Xylenes, Total	ND		mg/kg	0.0015	0.00043	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-11
Client ID: TG06-MW04-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 17:54
Analyst: SLS
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	0.0016		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	0.0021		mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0020	J	mg/kg	0.0023	0.00064	1
o-Xylene	0.00040	J	mg/kg	0.0011	0.00033	1
Xylenes, Total	0.0024	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.019		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.012		mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.016		mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12 D2
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 09:36
Analyst: AJK
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	8.5	0.86	50
Benzene	3.4		mg/kg	2.1	0.71	50
1,2-Dichloroethane	ND		mg/kg	4.3	1.1	50
Toluene	5.1		mg/kg	4.3	2.3	50
1,2-Dibromoethane	ND		mg/kg	2.1	1.2	50
Ethylbenzene	89.		mg/kg	4.3	0.60	50
p/m-Xylene	38.		mg/kg	8.5	2.4	50
o-Xylene	3.7	J	mg/kg	4.3	1.2	50
Xylenes, Total	42.	J	mg/kg	4.3	1.2	50
Isopropylbenzene	930		mg/kg	4.3	0.46	50
1,3,5-Trimethylbenzene	610		mg/kg	8.5	0.82	50
1,2,4-Trimethylbenzene	1800	E	mg/kg	8.5	1.4	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12 D
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/04/23 14:44
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	1800		mg/kg	17	2.8	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-13
Client ID: TG06-MW04-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:20
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/05/23 19:39
Analyst: JIC
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	1.9		mg/kg	0.056	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	4.0		mg/kg	0.11	0.060	1
1,2-Dibromoethane	ND		mg/kg	0.056	0.032	1
Ethylbenzene	3.4		mg/kg	0.11	0.016	1
p/m-Xylene	7.4		mg/kg	0.22	0.062	1
o-Xylene	1.1		mg/kg	0.11	0.032	1
Xylenes, Total	8.5		mg/kg	0.11	0.032	1
Isopropylbenzene	20.		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	7.8		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	14.		mg/kg	0.22	0.037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	**158**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-14
Client ID: TG06-MW04-9.5-10.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/01/23 18:20
Analyst: SLS
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.0018	J	mg/kg	0.0031	0.00031	1
Benzene	ND		mg/kg	0.00077	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	ND		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00077	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	0.0027	J	mg/kg	0.0031	0.00086	1
o-Xylene	0.0032		mg/kg	0.0015	0.00045	1
Xylenes, Total	0.0059	J	mg/kg	0.0015	0.00045	1
Isopropylbenzene	0.0013	J	mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	0.0042		mg/kg	0.0031	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-16
Client ID: GPR285-16-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/04/23 10:57
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00027	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	ND		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-18
Client ID: GPR286-18-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:35
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/04/23 11:17
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	0.00026	J	mg/kg	0.00055	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00028	1
Toluene	ND		mg/kg	0.0011	0.00060	1
1,2-Dibromoethane	ND		mg/kg	0.00055	0.00032	1
Ethylbenzene	0.00017	J	mg/kg	0.0011	0.00016	1
p/m-Xylene	0.00087	J	mg/kg	0.0022	0.00062	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	0.00087	J	mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.00029	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-19
Client ID: FB-231129
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/04/23 18:57
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/04/23 11:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-19
Client ID: FB-231129
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 15:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/02/23 11:43
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-20
Client ID: TB-231129
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 00:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/04/23 19:05
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/04/23 11:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-20
Client ID: TB-231129
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 00:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/02/23 12:09
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/04/23 18:15
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/04/23 11:07

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 19-20 Batch: WG1858696-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2370407

Project Number: Not Specified **Report Date:** 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/01/23 09:34
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-04,06-08,10-11,14 Batch: WG1859519-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/02/23 11:18
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 19-20 Batch: WG1859960-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	112		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/04/23 08:42
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 16,18 Batch: WG1859980-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/04/23 08:42
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12 Batch: WG1859984-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/05/23 10:10
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 13 Batch: WG1860459-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 08:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1860465-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 08:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 12 Batch: WG1860467-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 19-20 Batch: WG1858696-2								
1,2-Dibromoethane	107		-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-04,06-08,10-11,14 Batch: WG1859519-3 WG1859519-4								
Methyl tert butyl ether	85		81		66-130	5		30
Benzene	85		79		70-130	7		30
1,2-Dichloroethane	91		88		70-130	3		30
Toluene	79		75		70-130	5		30
1,2-Dibromoethane	73		72		70-130	1		30
Ethylbenzene	84		80		70-130	5		30
p/m-Xylene	85		81		70-130	5		30
o-Xylene	88		84		70-130	5		30
Isopropylbenzene	89		84		70-130	6		30
1,3,5-Trimethylbenzene	89		85		70-130	5		30
1,2,4-Trimethylbenzene	89		86		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		106		70-130
Toluene-d8	91		91		70-130
4-Bromofluorobenzene	87		87		70-130
Dibromofluoromethane	94		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 19-20 Batch: WG1859960-3 WG1859960-4								
Methyl tert butyl ether	83		83		63-130	0		20
Benzene	89		87		70-130	2		20
1,2-Dichloroethane	84		83		70-130	1		20
Toluene	84		84		70-130	0		20
Ethylbenzene	82		82		70-130	0		20
p/m-Xylene	85		85		70-130	0		20
o-Xylene	85		85		70-130	0		20
Isopropylbenzene	80		78		70-130	3		20
1,3,5-Trimethylbenzene	80		79		64-130	1		20
1,2,4-Trimethylbenzene	79		78		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		100		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	102		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 16,18 Batch: WG1859980-3 WG1859980-4								
Methyl tert butyl ether	102		101		66-130	1		30
Benzene	83		84		70-130	1		30
1,2-Dichloroethane	82		85		70-130	4		30
Toluene	84		82		70-130	2		30
1,2-Dibromoethane	87		86		70-130	1		30
Ethylbenzene	90		88		70-130	2		30
p/m-Xylene	93		90		70-130	3		30
o-Xylene	93		92		70-130	1		30
Isopropylbenzene	92		88		70-130	4		30
1,3,5-Trimethylbenzene	92		89		70-130	3		30
1,2,4-Trimethylbenzene	93		90		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	101		99		70-130
Dibromofluoromethane	121		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12 Batch: WG1859984-3 WG1859984-4								
Methyl tert butyl ether	102		101		66-130	1		30
Benzene	83		84		70-130	1		30
1,2-Dichloroethane	82		85		70-130	4		30
Toluene	84		82		70-130	2		30
1,2-Dibromoethane	87		86		70-130	1		30
Ethylbenzene	90		88		70-130	2		30
p/m-Xylene	93		90		70-130	3		30
o-Xylene	93		92		70-130	1		30
Isopropylbenzene	92		88		70-130	4		30
1,3,5-Trimethylbenzene	92		89		70-130	3		30
1,2,4-Trimethylbenzene	93		90		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
Toluene-d8	97		99		70-130
4-Bromofluorobenzene	101		99		70-130
Dibromofluoromethane	121		95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 13 Batch: WG1860459-3 WG1860459-4								
Methyl tert butyl ether	105		107		66-130	2		30
Benzene	94		93		70-130	1		30
1,2-Dichloroethane	92		95		70-130	3		30
Toluene	90		88		70-130	2		30
1,2-Dibromoethane	88		87		70-130	1		30
Ethylbenzene	92		88		70-130	4		30
p/m-Xylene	92		90		70-130	2		30
o-Xylene	93		90		70-130	3		30
Isopropylbenzene	86		84		70-130	2		30
1,3,5-Trimethylbenzene	86		84		70-130	2		30
1,2,4-Trimethylbenzene	86		85		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		102		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		91		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1860465-3 WG1860465-4								
Methyl tert butyl ether	102		107		66-130	5		30
Benzene	82		90		70-130	9		30
1,2-Dichloroethane	83		92		70-130	10		30
Toluene	80		86		70-130	7		30
1,2-Dibromoethane	83		88		70-130	6		30
Ethylbenzene	85		92		70-130	8		30
p/m-Xylene	88		95		70-130	8		30
o-Xylene	89		97		70-130	9		30
Isopropylbenzene	85		91		70-130	7		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	86		92		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		95		70-130
Toluene-d8	95		96		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	112		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 12 Batch: WG1860467-3 WG1860467-4								
Methyl tert butyl ether	102		107		66-130	5		30
Benzene	82		90		70-130	9		30
1,2-Dichloroethane	83		92		70-130	10		30
Toluene	80		86		70-130	7		30
1,2-Dibromoethane	83		88		70-130	6		30
Ethylbenzene	85		92		70-130	8		30
p/m-Xylene	88		95		70-130	8		30
o-Xylene	89		97		70-130	9		30
Isopropylbenzene	85		91		70-130	7		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	86		92		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		95		70-130
Toluene-d8	95		96		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	112		100		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-02
Client ID: GPR285-17-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 04:39
Analyst: EK
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.5		mg/kg	0.053	0.032	1
Fluorene	1.0		mg/kg	0.26	0.026	1
Phenanthrene	3.0		mg/kg	0.16	0.032	1
Anthracene	0.79		mg/kg	0.16	0.051	1
Pyrene	2.2		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.95		mg/kg	0.16	0.030	1
Chrysene	1.0		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	1.1		mg/kg	0.16	0.044	1
Benzo(a)pyrene	1.0		mg/kg	0.21	0.064	1
Benzo(ghi)perylene	0.53		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-03
Client ID: GPR285-15-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 06:40
Analyst: EK
Percent Solids: 61%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.69		mg/kg	0.053	0.032	1
Fluorene	0.13	J	mg/kg	0.27	0.026	1
Phenanthrene	0.36		mg/kg	0.16	0.032	1
Anthracene	0.12	J	mg/kg	0.16	0.052	1
Pyrene	0.42		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.35		mg/kg	0.16	0.030	1
Chrysene	0.36		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.53		mg/kg	0.16	0.045	1
Benzo(a)pyrene	0.52		mg/kg	0.21	0.065	1
Benzo(ghi)perylene	0.26		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-04 D
Client ID: GPR285-15-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 07:04
Analyst: EK
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.2		mg/kg	0.21	0.13	5
Fluorene	0.39	J	mg/kg	1.0	0.10	5
Phenanthrene	1.4		mg/kg	0.63	0.13	5
Anthracene	0.48	J	mg/kg	0.63	0.20	5
Pyrene	2.1		mg/kg	0.63	0.10	5
Benzo(a)anthracene	1.4		mg/kg	0.63	0.12	5
Chrysene	1.4		mg/kg	0.63	0.11	5
Benzo(b)fluoranthene	1.7		mg/kg	0.63	0.18	5
Benzo(a)pyrene	1.6		mg/kg	0.84	0.26	5
Benzo(ghi)perylene	0.78	J	mg/kg	0.84	0.12	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-05
Client ID: GPR285-15-6.5-7.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 06:16
Analyst: EK
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.7		mg/kg	0.050	0.031	1
Fluorene	0.55		mg/kg	0.25	0.024	1
Phenanthrene	1.5		mg/kg	0.15	0.031	1
Anthracene	0.47		mg/kg	0.15	0.049	1
Pyrene	1.8		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.81		mg/kg	0.15	0.028	1
Chrysene	0.94		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.1		mg/kg	0.15	0.042	1
Benzo(a)pyrene	1.0		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.61		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	80		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-06
Client ID: GPR285-14-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 07:28
Analyst: EK
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.055	0.033	1
Fluorene	0.61		mg/kg	0.27	0.027	1
Phenanthrene	4.6		mg/kg	0.16	0.033	1
Anthracene	0.87		mg/kg	0.16	0.053	1
Pyrene	4.2		mg/kg	0.16	0.027	1
Benzo(a)anthracene	2.7		mg/kg	0.16	0.031	1
Chrysene	3.0		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	3.8		mg/kg	0.16	0.046	1
Benzo(a)pyrene	3.4		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.7		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-07
Client ID: GPR285-14-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 08:16
Analyst: EK
Percent Solids: 56%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.5		mg/kg	0.058	0.035	1
Fluorene	0.24	J	mg/kg	0.29	0.028	1
Phenanthrene	1.3		mg/kg	0.17	0.035	1
Anthracene	0.64		mg/kg	0.17	0.056	1
Pyrene	3.6		mg/kg	0.17	0.029	1
Benzo(a)anthracene	3.2		mg/kg	0.17	0.032	1
Chrysene	3.3		mg/kg	0.17	0.030	1
Benzo(b)fluoranthene	4.4		mg/kg	0.17	0.049	1
Benzo(a)pyrene	4.1		mg/kg	0.23	0.070	1
Benzo(ghi)perylene	2.1		mg/kg	0.23	0.034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-08
Client ID: GPR285-14-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 12:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 05:27
Analyst: EK
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.053	0.032	1
Fluorene	0.64		mg/kg	0.26	0.026	1
Phenanthrene	2.3		mg/kg	0.16	0.032	1
Anthracene	0.53		mg/kg	0.16	0.052	1
Pyrene	2.1		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.89		mg/kg	0.16	0.030	1
Chrysene	1.0		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	1.1		mg/kg	0.16	0.045	1
Benzo(a)pyrene	0.97		mg/kg	0.21	0.065	1
Benzo(ghi)perylene	0.56		mg/kg	0.21	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	81		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-10
Client ID: GPR285-09-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 03:27
Analyst: EK
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.0		mg/kg	0.048	0.030	1
Fluorene	0.20	J	mg/kg	0.24	0.024	1
Phenanthrene	1.2		mg/kg	0.14	0.029	1
Anthracene	0.36		mg/kg	0.14	0.047	1
Pyrene	1.7		mg/kg	0.14	0.024	1
Benzo(a)anthracene	1.5		mg/kg	0.14	0.027	1
Chrysene	1.4		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	2.1		mg/kg	0.14	0.041	1
Benzo(a)pyrene	1.9		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	1.0		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	85		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-11
Client ID: TG06-MW04-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 05:03
Analyst: EK
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.041	0.025	1
Fluorene	0.25		mg/kg	0.20	0.020	1
Phenanthrene	1.5		mg/kg	0.12	0.025	1
Anthracene	0.53		mg/kg	0.12	0.040	1
Pyrene	2.1		mg/kg	0.12	0.020	1
Benzo(a)anthracene	1.4		mg/kg	0.12	0.023	1
Chrysene	1.3		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	1.5		mg/kg	0.12	0.034	1
Benzo(a)pyrene	1.3		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	0.69		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	96		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 05:52
Analyst: EK
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	27.	E	mg/kg	0.045	0.027	1
Fluorene	1.4		mg/kg	0.22	0.022	1
Phenanthrene	3.4		mg/kg	0.13	0.027	1
Anthracene	0.81		mg/kg	0.13	0.044	1
Pyrene	2.2		mg/kg	0.13	0.022	1
Benzo(a)anthracene	1.4		mg/kg	0.13	0.025	1
Chrysene	1.5		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	2.1		mg/kg	0.13	0.038	1
Benzo(a)pyrene	1.7		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	1.3		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	81		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12 D
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/03/23 21:28
Analyst: LJG
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	52.		mg/kg	0.45	0.27	10

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-13
Client ID: TG06-MW04-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:20
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 04:15
Analyst: EK
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.051	0.031	1
Fluorene	0.18	J	mg/kg	0.25	0.025	1
Phenanthrene	0.65		mg/kg	0.15	0.031	1
Anthracene	0.20		mg/kg	0.15	0.050	1
Pyrene	0.53		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.38		mg/kg	0.15	0.029	1
Chrysene	0.43		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	0.73		mg/kg	0.15	0.043	1
Benzo(a)pyrene	0.64		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.46		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	91		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-14
Client ID: TG06-MW04-9.5-10.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 03:03
Analyst: EK
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.4		mg/kg	0.054	0.033	1
Fluorene	0.31		mg/kg	0.27	0.026	1
Phenanthrene	1.2		mg/kg	0.16	0.033	1
Anthracene	0.41		mg/kg	0.16	0.053	1
Pyrene	1.2		mg/kg	0.16	0.027	1
Benzo(a)anthracene	0.53		mg/kg	0.16	0.031	1
Chrysene	0.65		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.63		mg/kg	0.16	0.046	1
Benzo(a)pyrene	0.67		mg/kg	0.22	0.066	1
Benzo(ghi)perylene	0.36		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	94		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-16
Client ID: GPR285-16-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 02:38
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.23		mg/kg	0.037	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	0.075	J	mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.10	J	mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.077	J	mg/kg	0.11	0.021	1
Chrysene	0.081	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.13		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.12	J	mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.068	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	95		30-120
4-Terphenyl-d14	120		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-18
Client ID: GPR286-18-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:35
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/02/23 03:51
Analyst: IM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.2		mg/kg	0.038	0.023	1
Fluorene	0.12	J	mg/kg	0.19	0.018	1
Phenanthrene	0.66		mg/kg	0.11	0.023	1
Anthracene	0.24		mg/kg	0.11	0.037	1
Pyrene	0.64		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.52		mg/kg	0.11	0.021	1
Chrysene	0.65		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.94		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.90		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.74		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	88		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-19
Client ID: FB-231129
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/03/23 18:45
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/02/23 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.06	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	78		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/03/23 15:23
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 12/01/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-08,10-14,16,18 Batch: WG1858438-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	83		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/03/23 18:29
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 12/02/23 16:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 19 Batch: WG1859025-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	54		15-120
4-Terphenyl-d14	57		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-08,10-14,16,18 Batch: WG1858438-2 WG1858438-3								
Naphthalene	93		96		40-140	3		50
Fluorene	92		93		40-140	1		50
Phenanthrene	91		94		40-140	3		50
Anthracene	96		100		40-140	4		50
Pyrene	95		96		35-142	1		50
Benzo(a)anthracene	92		95		40-140	3		50
Chrysene	96		100		40-140	4		50
Benzo(b)fluoranthene	102		104		40-140	2		50
Benzo(a)pyrene	116		118		40-140	2		50
Benzo(ghi)perylene	97		101		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	96		91		23-120
2-Fluorobiphenyl	83		75		30-120
4-Terphenyl-d14	101		90		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 19 Batch: WG1859025-2 WG1859025-3								
Naphthalene	61		59		40-140	3		40
Fluorene	66		64		40-140	3		40
Phenanthrene	68		66		40-140	3		40
Anthracene	73		71		40-140	3		40
Pyrene	82		82		26-127	0		40
Benzo(a)anthracene	72		70		40-140	3		40
Chrysene	66		66		40-140	0		40
Benzo(b)fluoranthene	75		73		40-140	3		40
Benzo(a)pyrene	74		74		40-140	0		40
Indeno(1,2,3-cd)pyrene	91		89		40-140	2		40
Benzo(ghi)perylene	78		77		40-140	1		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	77		74		23-120
2-Fluorobiphenyl	60		58		15-120
4-Terphenyl-d14	75		74		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-02
Client ID: GPR285-17-3.0-3.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 10:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 62%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	264		mg/kg	3.14	0.168	1	12/01/23 06:40	12/01/23 19:39	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-03
Client ID: GPR285-15-0.5-1.0
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 10:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 61%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	25.6		mg/kg	3.12	0.167	1	12/01/23 06:40	12/01/23 19:26	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-04
Client ID: GPR285-15-6.0-6.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 10:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	100		mg/kg	2.43	0.130	1	12/01/23 06:40	12/01/23 19:30	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-05
Client ID: GPR285-15-6.5-7.0
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 11:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	272		mg/kg	3.02	0.162	1	12/01/23 06:40	12/01/23 19:35	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-06
Client ID: GPR285-14-0.5-1.0
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 11:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	268		mg/kg	3.11	0.167	1	12/01/23 06:40	12/01/23 20:18	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-07
Client ID: GPR285-14-5.0-5.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 11:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	304		mg/kg	3.46	0.185	1	12/01/23 06:40	12/01/23 20:23	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-08
Client ID: GPR285-14-6.0-6.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 12:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	311		mg/kg	3.12	0.167	1	12/01/23 06:40	12/01/23 20:27	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-10
Client ID: GPR285-09-2.0-2.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 13:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	190		mg/kg	2.87	0.154	1	12/01/23 06:40	12/01/23 20:32	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-11
Client ID: TG06-MW04-0.5-1.0
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 13:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	108		mg/kg	2.43	0.130	1	12/01/23 06:40	12/01/23 20:36	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	191		mg/kg	2.67	0.143	1	12/01/23 06:40	12/01/23 20:41	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-13
Client ID: TG06-MW04-5.0-5.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 14:20
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	225		mg/kg	3.00	0.161	1	12/01/23 06:40	12/01/23 20:45	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-14
Client ID: TG06-MW04-9.5-10.0
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 14:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	291		mg/kg	3.22	0.173	1	12/01/23 06:40	12/01/23 20:50	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-16
Client ID: GPR285-16-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	22.8		mg/kg	2.23	0.120	1	12/01/23 06:40	12/01/23 20:54	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370407
Project Number: Not Specified
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-18
Client ID: GPR286-18-3.0-3.5
Sample Location: PHILADELPHIA PA
Date Collected: 11/29/23 15:35
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	49.2		mg/kg	2.27	0.122	1	12/01/23 06:40	12/01/23 20:59	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-19
Client ID: FB-231129
Sample Location: PHILADELPHIA PA
Sample Depth:
Matrix: Water

Date Collected: 11/29/23 15:45
Date Received: 11/29/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/23 10:30	12/03/23 20:43	EPA 3005A	1,6020B	WKP

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified
Lab Number: L2370407
Report Date: 12/08/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 19 Batch: WG1858123-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/01/23 10:30	12/03/23 19:46	1,6020B	WKP

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-08,10-14,16,18 Batch: WG1858131-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/01/23 06:40	12/01/23 19:16	1,6010D	JTS

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19 Batch: WG1858123-2								
Lead, Total	99		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 02-08,10-14,16,18 Batch: WG1858131-2 SRM Lot Number: D122-540								
Lead, Total	108		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 19 QC Batch ID: WG1858123-3 QC Sample: L2370287-01 Client ID: MS Sample												
Lead, Total	ND	530	523.1	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-08,10-14,16,18 QC Batch ID: WG1858131-3 QC Sample: L2370407-02 Client ID: GPR285-17-3.0-3.5												
Lead, Total	264	65.5	325	93		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08,10-14,16,18 QC Batch ID: WG1858131-4 QC Sample: L2370407-02 Client ID: GPR285-17-3.0-3.5						
Lead, Total	264	261	mg/kg	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-02
Client ID: GPR285-17-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	61.7		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-03
Client ID: GPR285-15-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	61.1		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-04
Client ID: GPR285-15-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 10:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.6		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-05
Client ID: GPR285-15-6.5-7.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-06
Client ID: GPR285-14-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:30
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.4		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-07
Client ID: GPR285-14-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 11:45
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.1		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-08
Client ID: GPR285-14-6.0-6.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 12:10
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	62.5		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-10
Client ID: GPR285-09-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.2		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-11
Client ID: TG06-MW04-0.5-1.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 13:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.4		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-12
Client ID: TG06-MW04-2.0-2.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:00
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.4		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-13
Client ID: TG06-MW04-5.0-5.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:20
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.0		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-14
Client ID: TG06-MW04-9.5-10.0
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 14:40
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-16
Client ID: GPR285-16-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:15
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.4		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

SAMPLE RESULTS

Lab ID: L2370407-18
Client ID: GPR286-18-3.0-3.5
Sample Location: PHILADELPHIA PA

Date Collected: 11/29/23 15:35
Date Received: 11/29/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.9		%	0.100	NA	1	-	12/01/23 17:03	121,2540G	SJB

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: Not Specified

Lab Number: L2370407

Report Date: 12/08/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-08,10-14,16,18 QC Batch ID: WG1858780-1 QC Sample: L2370222-01 Client ID: DUP Sample						
Solids, Total	77.2	74.8	%	3		20

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370407-01A	Vial MeOH preserved	A	NA		3.2	Y	Absent		HOLD-8260HLW(14)
L2370407-01B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-01C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-01D	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		HOLD-METAL(180)
L2370407-01E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		HOLD-WETCHEM()
L2370407-01F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		HOLD-WETCHEM()
L2370407-02A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-02B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-02C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-02E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-02F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-03A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-03B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-03C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-03E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-03F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-04A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-04B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-04C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370407-04E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-04F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-05A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-05B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-05C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-05E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-05F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-06A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-06B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-06C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-06D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-06E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-06F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-07A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-07B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-07C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-07D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-07E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-07F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-08A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-08B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-08C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-08D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-08E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-08F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-09A	Vial MeOH preserved	A	NA		3.2	Y	Absent		HOLD-8260HLW(14)
L2370407-09B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370407-09C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-09D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		HOLD-METAL(180)
L2370407-09E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		HOLD-WETCHEM()
L2370407-09F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		HOLD-8270(14)
L2370407-10A	Vial MeOH preserved	A	NA		3.2	Y	Absent		PA-8260HLW(14)
L2370407-10B	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-10C	Vial water preserved	A	NA		3.2	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-10D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		PB-TI(180)
L2370407-10E	Plastic 120ml unpreserved	A	NA		3.2	Y	Absent		TS(7)
L2370407-10F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		PA-PAH(14)
L2370407-11A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-11B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-11C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-11D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)
L2370407-11E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-11F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)
L2370407-12A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-12B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-12C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-12D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)
L2370407-12E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-12F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)
L2370407-13A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-13B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-13C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-13D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)
L2370407-13E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-13F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370407-14A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-14B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-14C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-14D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)
L2370407-14E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-14F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)
L2370407-15A	Vial MeOH preserved	B	NA		3.4	Y	Absent		HOLD-8260HLW(14)
L2370407-15B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-15C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-15D	Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		HOLD-METAL(180)
L2370407-15E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		HOLD-WETCHEM()
L2370407-15F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		HOLD-WETCHEM()
L2370407-16A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-16B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-16C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-16D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)
L2370407-16E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-16F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)
L2370407-17A	Vial MeOH preserved	B	NA		3.4	Y	Absent		HOLD-8260HLW(14)
L2370407-17B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-17C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	HOLD-8260HLW(14)
L2370407-17D	Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		HOLD-METAL(180)
L2370407-17E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		HOLD-WETCHEM()
L2370407-17F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		HOLD-WETCHEM()
L2370407-18A	Vial MeOH preserved	B	NA		3.4	Y	Absent		PA-8260HLW(14)
L2370407-18B	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-18C	Vial water preserved	B	NA		3.4	Y	Absent	30-NOV-23 07:51	PA-8260HLW(14)
L2370407-18D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.4	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: Not Specified

Lab Number: L2370407
Report Date: 12/08/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370407-18E	Plastic 120ml unpreserved	B	NA		3.4	Y	Absent		TS(7)
L2370407-18F	Glass 120ml/4oz unpreserved	B	NA		3.4	Y	Absent		PA-PAH(14)
L2370407-19A	Vial HCl preserved	B	NA		3.4	Y	Absent		PA-8260(14)
L2370407-19B	Vial HCl preserved	B	NA		3.4	Y	Absent		PA-8260(14)
L2370407-19C	Vial HCl preserved	B	NA		3.4	Y	Absent		8011(14)
L2370407-19D	Amber 250ml unpreserved	NA	NA			Y	Absent		PA-PAHSIM-LVI(7)
L2370407-19E	Amber 250ml unpreserved	NA	NA			Y	Absent		PA-PAHSIM-LVI(7)
L2370407-19F	Plastic 500ml HNO3 preserved	NA	NA			Y	Absent		PB-6020T-PPB(180)
L2370407-20A	Vial HCl preserved	B	NA		3.4	Y	Absent		PA-8260(14)
L2370407-20B	Vial HCl preserved	B	NA		3.4	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370407
Project Number:	Not Specified	**Report Date:**	12/08/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 1 of 2

Date Rec'd in Lab: 11/30/23

ALPHA Job #: L2370407

Client Information
Client: Ramboll Consulting
Address: 2129 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: William.Schmidt@ramboll.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: ~~800.00125~~ 803.03125
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
NJDEP Suite List 1-5 List + Naphthalene (1,3,7)

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NJDEP Suite List 1-5 List + Naphthalene (1,3,7)	Sample Specific Comments	Total Bottle
70407-01	GPR285-17-0.5-1.0'	11/29/23	9:45	S	ND	H	Hold	6
-02	GPR285-17-3.0-3.5'		10:00			X		6
-03	GPR285-15-0.5-1.0'		10:30			X		6
-04	GPR285-15-6.0-6.5'		10:45			X		6
-05	GPR285-16-6.5-7.0'		11:10			X		6
-06	GPR285-14-0.5-1.0'		11:30			X		6
-07	GPR285-14-5.5-5.5'		11:45			X		6
-08	GPR285-14-6.0-6.5'		12:10			X		6
-09	GPR285-09-0.5-1.0'		12:50			X		6
-10	GPR285-09-2.0-2.5'	↓	13:15	↓	↓	X		6

Container Type: G
Preservative: A,B

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Nathaly Daigle	11/29/23 16:15	APL	11/29/23 16:15
APL	11/29/23 1800		11/29/23 1800
	11/29/23 2100	Anthony Green	NOV 29 2023 2100
Anthony Green	11/30 0100		11/30 0100
	11/30/23 0300		11/30/23 0300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab: 11/30/23

ALPHA Job #: L2370107

Client Information
Client: Ramboll Consulting
Address: 2127 Hamilton Avenue
Hamilton NJ 08619
Phone: 609-584-0140
Fax:
Email: william.schmidt@ramboll.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 800.00125
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
PFAS Short List (21 Analytes)

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS								Sample Specific Comments	Total Bottles
70407-11	TG06-MW04-0.5-1.0'	11/29/23	13:40	S	ND	X									6
-12	TG06-MW04-2.0-2.5'		14:00			X									6
-13	TG06-MW04-5.0-5.5'		14:20			X									6
-14	~~GPR285~~ TG06-MW04-9.5-10.0'		14:40			X									6
-15	GPR285-16-0.5-1.0'		15:00			H								Hold	6
-16	GPR285-16-3.0-3.5'		15:15			X									6
-17	GPR286-16-0.5-1.0'		15:25			H								Hold	6
-18	GPR286-18-3.0-3.5'		15:35	↓		X									6
-19	Field Blank		15:45	Blank											6
-20	Trip Blank	↓	15:45	Blank	↓										6

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	G										
Preservative	AB										

Relinquished By:	Date/Time	Received By:	Date/Time
	11/29/23 16:15		11/29/23 16:15
	11/29/23 1800		11/29/23 1800
	11/29/23 2100	Anthony Green	NOV 29 2023 2100
Anthony Green	11/30 0100		11/30 0100
	11/30/23 0300		11/30/23 0300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

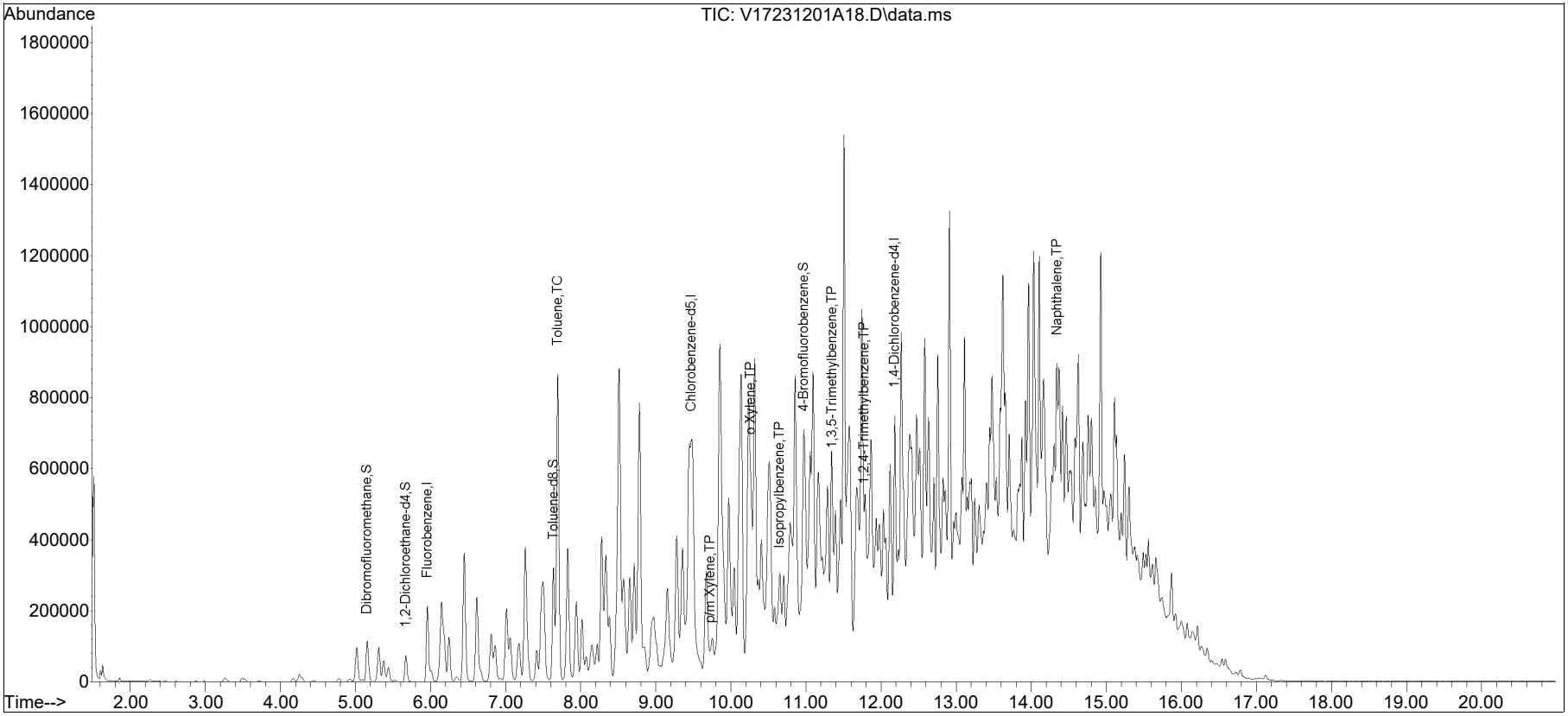
Form No: 01-14 HC (rev. 30-Sept-2013)

Quantitation Report (QT Reviewed)

Data Path : K:\VOA117\2023\231201A\
Data File : V17231201A18.D
Acq On : 01 Dec 2023 03:16 pm
Operator : VOA117:SLS
Sample : l2370407-04,31,5.03,5,,c
Misc : WG1859519,ICAL20405
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 02 06:50:38 2023
Quant Method : K:\VOA117\2023\231201A\V117_230928N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Oct 02 10:26:21 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list201A01.D•

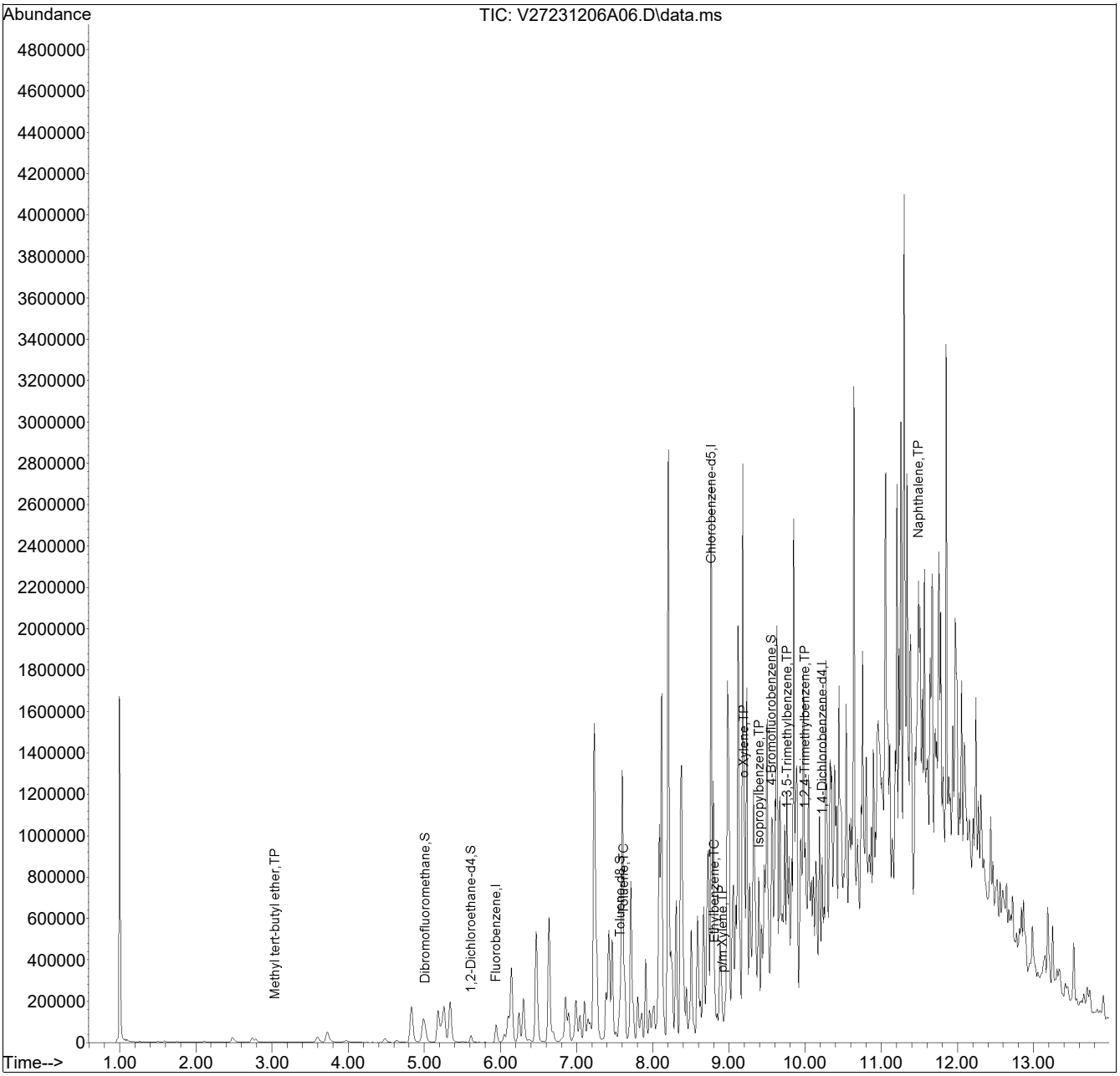


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231206A\
Data File : V27231206A06.D
Acq On : 06 Dec 2023 09:15 am
Operator : VOA127:AJK
Sample : l2370407-05,31,4.68,5,,c
Misc : WG1860465,ICAL20585
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 06 10:34:40 2023
Quant Method : K:\VOA127\2023\231206A\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

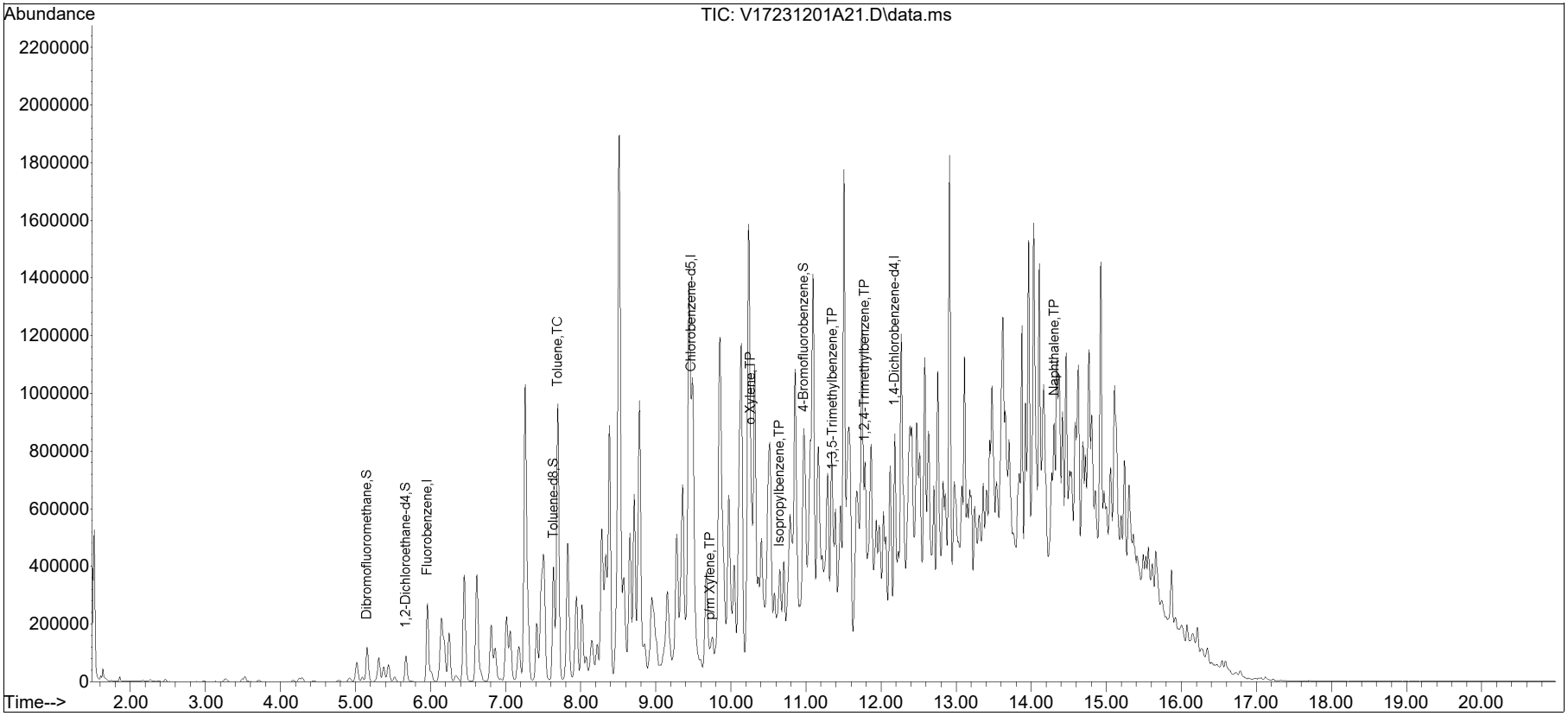


Quantitation Report (QT Reviewed)

Data Path : K:\VOA117\2023\231201A\
Data File : V17231201A21.D
Acq On : 01 Dec 2023 04:35 pm
Operator : VOA117:SLS
Sample : l2370407-08,31,4.30,5,,c
Misc : WG1859519,ICAL20405
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 02 06:53:01 2023
Quant Method : K:\VOA117\2023\231201A\V117_230928N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Oct 02 10:26:21 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list201A01.D•



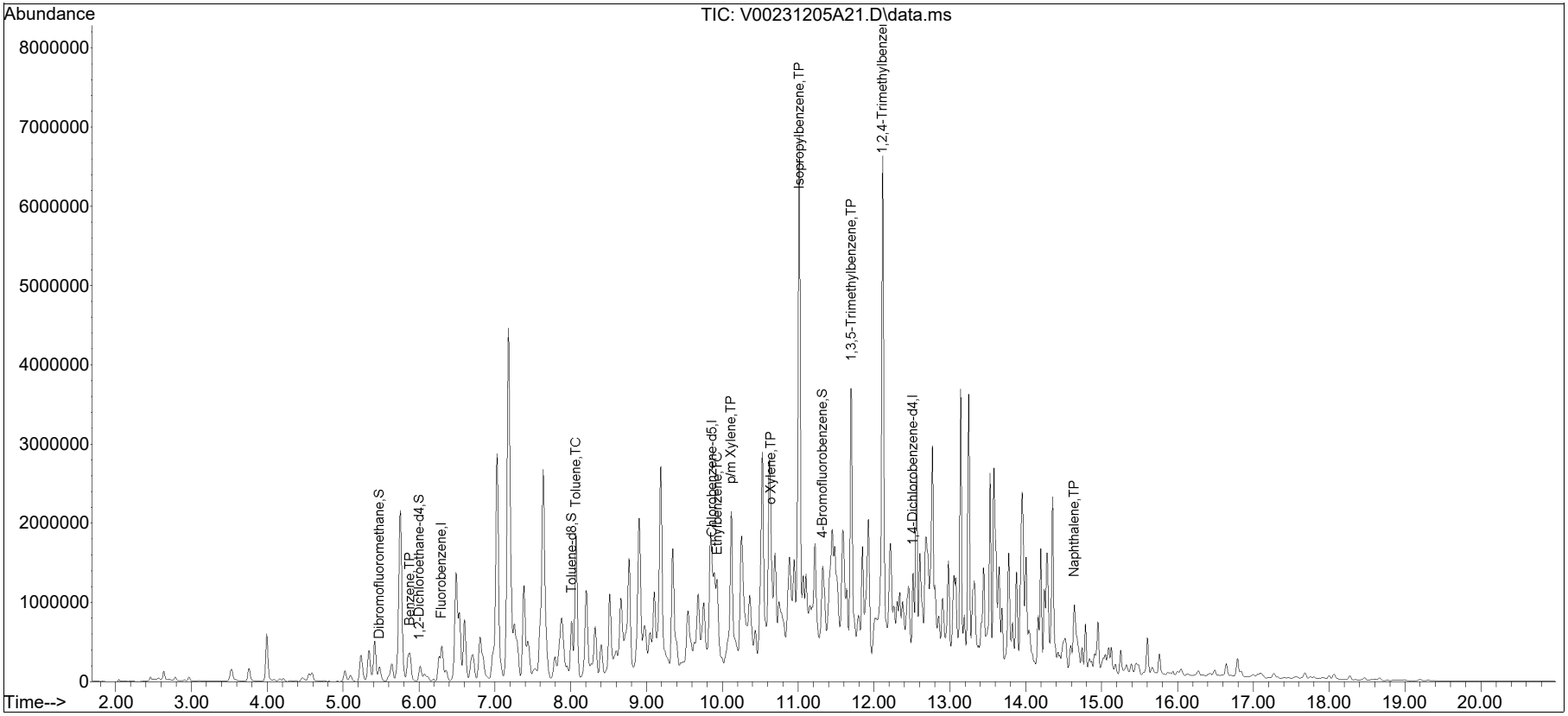
V117_230928N_8260.m Mon Dec 04 13:26:28 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : K:\VOA100\2023\231205A\
Data File : V00231205A21.D
Acq On : 5 Dec 2023 7:39 pm
Operator : VOA100:JIC
Sample : L2370407-13,31H,4.57,5,0.100,,A
Misc : WG1860459,ICAL20583
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 06 07:17:40 2023
Quant Method : K:\VOA100\2023\231205A\V100_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 06:44:48 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list205A02.D•



ANALYTICAL REPORT

Lab Number:	L2370894
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.005.03
Report Date:	12/17/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2370894-01	GPR276-20-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 15:45	12/01/23
L2370894-02	GPR276-20-3.0-3.5	SOIL	PHILADELPHIA, PA	11/30/23 15:55	12/01/23
L2370894-03	GPR276-21-2.5-3.0	SOIL	PHILADELPHIA, PA	11/30/23 16:20	12/01/23
L2370894-04	GPR276-21-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 16:10	12/01/23
L2370894-05	GPR276-19-6.5-7.0	SOIL	PHILADELPHIA, PA	11/30/23 15:25	12/01/23
L2370894-06	GPR276-18-4.5-5.0	SOIL	PHILADELPHIA, PA	11/30/23 14:55	12/01/23
L2370894-07	GPR276-19-9.5-10.0	SOIL	PHILADELPHIA, PA	11/30/23 15:35	12/01/23
L2370894-08	GPR276-19-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 15:15	12/01/23
L2370894-09	GPR276-18-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 14:45	12/01/23
L2370894-10	GPR276-18-9.5-10.0	SOIL	PHILADELPHIA, PA	11/30/23 15:05	12/01/23
L2370894-11	GPR276-16R-9.5-10.0	SOIL	PHILADELPHIA, PA	11/30/23 14:00	12/01/23
L2370894-12	GPR276-16R-5.0-5.5	SOIL	PHILADELPHIA, PA	11/30/23 13:50	12/01/23
L2370894-13	GPR276-16R-2.0-2.5	SOIL	PHILADELPHIA, PA	11/30/23 13:40	12/01/23
L2370894-14	GPR276-16R-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 13:30	12/01/23
L2370894-15	TG06-MW02-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 12:30	12/01/23
L2370894-16	TG06-MW02-6.0-6.5	SOIL	PHILADELPHIA, PA	11/30/23 12:50	12/01/23
L2370894-17	TG06-MW02-2.0-2.5	SOIL	PHILADELPHIA, PA	11/30/23 12:40	12/01/23
L2370894-18	GPR286-17-4.5-5.0	SOIL	PHILADELPHIA, PA	11/30/23 11:50	12/01/23
L2370894-19	TG06-MW02-9.5-10.0	SOIL	PHILADELPHIA, PA	11/30/23 13:00	12/01/23
L2370894-20	GPR286-17-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 11:40	12/01/23
L2370894-21	GPR286-14-4.5-5.0	SOIL	PHILADELPHIA, PA	11/30/23 11:10	12/01/23
L2370894-22	GPR286-15-2.0-2.5	SOIL	PHILADELPHIA, PA	11/30/23 11:30	12/01/23
L2370894-23	GPR286-14-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 11:00	12/01/23
L2370894-24	GPR286-09-3.0-3.5	SOIL	PHILADELPHIA, PA	11/30/23 10:45	12/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2370894-25	GPR286-09-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 10:35	12/01/23
L2370894-26	GPR286-15-0.5-1.0	SOIL	PHILADELPHIA, PA	11/30/23 11:20	12/01/23
L2370894-27	FB-231130	WATER	PHILADELPHIA, PA	11/30/23 16:30	12/01/23
L2370894-28	TB-231130	WATER	PHILADELPHIA, PA	11/30/23 00:00	12/01/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

Case Narrative (continued)

Report Submission

December 17, 2023: This final report includes the results of the following analyses:

L2370894-01 and -04: Volatile Organics, Semivolatile Organics and Total Metals

December 08, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2370894-02D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (143%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370894-03D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (193%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370894-05: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (256%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2370894-09: The internal standard (IS) response(s) for fluorobenzene (28%), chlorobenzene-d5 (29%), and 1,4-dichlorobenzene-d4 (28%) were outside the acceptance criteria; however, re-analysis achieved the following results: fluorobenzene (23%), chlorobenzene-d5 (26%), and 1,4-dichlorobenzene-d4 (26%) and the surrogate recovery for 1,2-dichloroethane-d4 (190%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

L2370894-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (151%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

Case Narrative (continued)

L2370894-14: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (135%) and 4-bromofluorobenzene (188%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables

L2370894-27: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

Semivolatile Organics

L2370894-14D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Total Metals

The WG1859568-3 MS recovery, performed on L2370894-02, is outside the acceptance criteria for lead (126%). A post digestion spike was performed and yielded an unacceptable recovery for lead (68%). The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 12/17/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-01
Client ID: GPR276-20-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 14:48
Analyst: MKS
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.00017	J	mg/kg	0.00052	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00027	1
Toluene	ND		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00052	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00058	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.00033	J	mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-02 D
Client ID: GPR276-20-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 12:42
Analyst: TMS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	2.2	0.22	10
Benzene	5.2		mg/kg	0.55	0.18	10
1,2-Dichloroethane	ND		mg/kg	1.1	0.28	10
Toluene	9.1		mg/kg	1.1	0.60	10
1,2-Dibromoethane	ND		mg/kg	0.55	0.32	10
Ethylbenzene	7.8		mg/kg	1.1	0.16	10
p/m-Xylene	18.		mg/kg	2.2	0.62	10
o-Xylene	3.0		mg/kg	1.1	0.32	10
Xylenes, Total	21.		mg/kg	1.1	0.32	10
Isopropylbenzene	22.		mg/kg	1.1	0.12	10
1,3,5-Trimethylbenzene	110		mg/kg	2.2	0.21	10
1,2,4-Trimethylbenzene	20.		mg/kg	2.2	0.37	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**143**	Q	70-130
Dibromofluoromethane	86		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-03 D
Client ID: GPR276-21-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 13:02
Analyst: TMS
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.0	0.10	5
Benzene	1.1		mg/kg	0.26	0.085	5
1,2-Dichloroethane	ND		mg/kg	0.51	0.13	5
Toluene	3.1		mg/kg	0.51	0.28	5
1,2-Dibromoethane	ND		mg/kg	0.26	0.15	5
Ethylbenzene	6.5		mg/kg	0.51	0.072	5
p/m-Xylene	11.		mg/kg	1.0	0.29	5
o-Xylene	1.1		mg/kg	0.51	0.15	5
Xylenes, Total	12.		mg/kg	0.51	0.15	5
Isopropylbenzene	17.		mg/kg	0.51	0.056	5
1,3,5-Trimethylbenzene	12.		mg/kg	1.0	0.099	5
1,2,4-Trimethylbenzene	7.0		mg/kg	1.0	0.17	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**193**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-04
Client ID: GPR276-21-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 15:18
Analyst: MKS
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.00049		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	ND		mg/kg	0.00095	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	0.00031	J	mg/kg	0.00095	0.00013	1
p/m-Xylene	0.00062	J	mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00095	0.00028	1
Xylenes, Total	0.00062	J	mg/kg	0.00095	0.00028	1
Isopropylbenzene	0.00093	J	mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	0.00034	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.00049	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-05
Client ID: GPR276-19-6.5-7.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:25
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 13:23
Analyst: TMS
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0034	0.00034	1
Benzene	ND		mg/kg	0.00086	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00093	1
1,2-Dibromoethane	ND		mg/kg	0.00086	0.00050	1
Ethylbenzene	0.00028	J	mg/kg	0.0017	0.00024	1
p/m-Xylene	0.0019	J	mg/kg	0.0034	0.00096	1
o-Xylene	0.0040		mg/kg	0.0017	0.00050	1
Xylenes, Total	0.0059	J	mg/kg	0.0017	0.00050	1
Isopropylbenzene	0.0016	J	mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0034	0.00033	1
1,2,4-Trimethylbenzene	0.0032	J	mg/kg	0.0034	0.00057	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**256**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-06
Client ID: GPR276-18-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 14:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 17:28
Analyst: JIC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.0089		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.0012	J	mg/kg	0.0029	0.00082	1
o-Xylene	0.0016		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.0028	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.0088		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	0.00048	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-07
Client ID: GPR276-19-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:35
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 14:04
Analyst: TMS
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00091	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00047	1
Toluene	ND		mg/kg	0.0018	0.00099	1
1,2-Dibromoethane	ND		mg/kg	0.00091	0.00053	1
Ethylbenzene	0.00035	J	mg/kg	0.0018	0.00026	1
p/m-Xylene	0.0013	J	mg/kg	0.0036	0.0010	1
o-Xylene	0.0012	J	mg/kg	0.0018	0.00053	1
Xylenes, Total	0.0025	J	mg/kg	0.0018	0.00053	1
Isopropylbenzene	0.015		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.0020	J	mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	0.0025	J	mg/kg	0.0036	0.00061	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-08
Client ID: GPR276-19-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 14:25
Analyst: TMS
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-09
Client ID: GPR276-18-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 14:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 14:46
Analyst: TMS
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00027	1
Benzene	0.00073		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.00086	J	mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00039	1
Ethylbenzene	0.00036	J	mg/kg	0.0013	0.00019	1
p/m-Xylene	0.0010	J	mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.0010	J	mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00026	1
1,2,4-Trimethylbenzene	0.00051	J	mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-09 R
Client ID: GPR276-18-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 14:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 17:54
Analyst: JIC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**190**	Q	70-130
Toluene-d8	84		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	124		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-10
Client ID: GPR276-18-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:05
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:06
Analyst: TMS
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	0.00042	J	mg/kg	0.0036	0.00036	1
Benzene	ND		mg/kg	0.00090	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	ND		mg/kg	0.0018	0.00098	1
1,2-Dibromoethane	ND		mg/kg	0.00090	0.00053	1
Ethylbenzene	0.00057	J	mg/kg	0.0018	0.00025	1
p/m-Xylene	0.0024	J	mg/kg	0.0036	0.0010	1
o-Xylene	0.0066		mg/kg	0.0018	0.00052	1
Xylenes, Total	0.0090	J	mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.010		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.0027	J	mg/kg	0.0036	0.00035	1
1,2,4-Trimethylbenzene	0.0058		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**151**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-11
Client ID: GPR276-16R-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 14:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:27
Analyst: TMS
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0042	0.00042	1
Benzene	ND		mg/kg	0.0010	0.00035	1
1,2-Dichloroethane	ND		mg/kg	0.0021	0.00054	1
Toluene	ND		mg/kg	0.0021	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00062	1
Ethylbenzene	0.00054	J	mg/kg	0.0021	0.00030	1
p/m-Xylene	ND		mg/kg	0.0042	0.0012	1
o-Xylene	0.0014	J	mg/kg	0.0021	0.00061	1
Xylenes, Total	0.0014	J	mg/kg	0.0021	0.00061	1
Isopropylbenzene	0.0014	J	mg/kg	0.0021	0.00023	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0042	0.00041	1
1,2,4-Trimethylbenzene	0.0022	J	mg/kg	0.0042	0.00070	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-12
Client ID: GPR276-16R-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:48
Analyst: TMS
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.26	0.026	1
Benzene	0.059	J	mg/kg	0.064	0.021	1
1,2-Dichloroethane	ND		mg/kg	0.13	0.033	1
Toluene	0.47		mg/kg	0.13	0.069	1
1,2-Dibromoethane	ND		mg/kg	0.064	0.037	1
Ethylbenzene	0.054	J	mg/kg	0.13	0.018	1
p/m-Xylene	0.18	J	mg/kg	0.26	0.072	1
o-Xylene	0.091	J	mg/kg	0.13	0.037	1
Xylenes, Total	0.27	J	mg/kg	0.13	0.037	1
Isopropylbenzene	0.11	J	mg/kg	0.13	0.014	1
1,3,5-Trimethylbenzene	0.079	J	mg/kg	0.26	0.025	1
1,2,4-Trimethylbenzene	0.13	J	mg/kg	0.26	0.043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-13
Client ID: GPR276-16R-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 16:08
Analyst: TMS
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.21	0.021	1
Benzene	0.77		mg/kg	0.053	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.027	1
Toluene	1.1		mg/kg	0.11	0.058	1
1,2-Dibromoethane	ND		mg/kg	0.053	0.031	1
Ethylbenzene	0.39		mg/kg	0.11	0.015	1
p/m-Xylene	1.2		mg/kg	0.21	0.059	1
o-Xylene	0.35		mg/kg	0.11	0.031	1
Xylenes, Total	1.6		mg/kg	0.11	0.031	1
Isopropylbenzene	1.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	0.74		mg/kg	0.21	0.020	1
1,2,4-Trimethylbenzene	0.72		mg/kg	0.21	0.035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-14
Client ID: GPR276-16R-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 18:44
Analyst: JIC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	0.42		mg/kg	0.026	0.0086	1
1,2-Dichloroethane	ND		mg/kg	0.052	0.013	1
Toluene	0.60		mg/kg	0.052	0.028	1
1,2-Dibromoethane	ND		mg/kg	0.026	0.015	1
Ethylbenzene	0.23		mg/kg	0.052	0.0073	1
p/m-Xylene	13.		mg/kg	0.10	0.029	1
o-Xylene	8.4		mg/kg	0.052	0.015	1
Xylenes, Total	21.		mg/kg	0.052	0.015	1
Isopropylbenzene	0.46		mg/kg	0.052	0.0057	1
1,3,5-Trimethylbenzene	13.		mg/kg	0.10	0.010	1
1,2,4-Trimethylbenzene	12.		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	**135**	Q	70-130
4-Bromofluorobenzene	**188**	Q	70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-15
Client ID: TG06-MW02-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 10:38
Analyst: AJK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00099	0.00025	1
Toluene	ND		mg/kg	0.00099	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.00099	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.00099	0.00029	1
Xylenes, Total	ND		mg/kg	0.00099	0.00029	1
Isopropylbenzene	ND		mg/kg	0.00099	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**141**	Q	70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	126		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-16
Client ID: TG06-MW02-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 16:37
Analyst: JIC
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	ND		mg/kg	0.00096	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00049	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00096	0.00056	1
Ethylbenzene	ND		mg/kg	0.0019	0.00027	1
p/m-Xylene	0.0014	J	mg/kg	0.0038	0.0011	1
o-Xylene	0.0017	J	mg/kg	0.0019	0.00056	1
Xylenes, Total	0.0031	J	mg/kg	0.0019	0.00056	1
Isopropylbenzene	0.00026	J	mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0038	0.00037	1
1,2,4-Trimethylbenzene	0.0025	J	mg/kg	0.0038	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-17
Client ID: TG06-MW02-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 17:03
Analyst: JIC
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00071	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00041	1
Ethylbenzene	0.00030	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	0.0033		mg/kg	0.0028	0.00079	1
o-Xylene	0.0016		mg/kg	0.0014	0.00041	1
Xylenes, Total	0.0049		mg/kg	0.0014	0.00041	1
Isopropylbenzene	0.00066	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0016	J	mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-18
Client ID: GPR286-17-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 11:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 11:48
Analyst: LAC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	ND		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00060	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0022	0.00062	1
o-Xylene	ND		mg/kg	0.0011	0.00032	1
Xylenes, Total	ND		mg/kg	0.0011	0.00032	1
Isopropylbenzene	ND		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00021	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**137**	Q	70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	119		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-19
Client ID: TG06-MW02-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 12:11
Analyst: LAC
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00031	1
Benzene	ND		mg/kg	0.00076	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	ND		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00076	0.00045	1
Ethylbenzene	ND		mg/kg	0.0015	0.00022	1
p/m-Xylene	ND		mg/kg	0.0030	0.00086	1
o-Xylene	0.00083	J	mg/kg	0.0015	0.00044	1
Xylenes, Total	0.00083	J	mg/kg	0.0015	0.00044	1
Isopropylbenzene	ND		mg/kg	0.0015	0.00017	1
1,3,5-Trimethylbenzene	0.00031	J	mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.00083	J	mg/kg	0.0030	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**146**	Q	70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	126		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-21
Client ID: GPR286-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 11:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 12:35
Analyst: LAC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00062	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00068	1
1,2-Dibromoethane	ND		mg/kg	0.00062	0.00037	1
Ethylbenzene	ND		mg/kg	0.0012	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00070	1
o-Xylene	ND		mg/kg	0.0012	0.00036	1
Xylenes, Total	ND		mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**144**	Q	70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	118		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-22
Client ID: GPR286-15-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 12:58
Analyst: LAC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00030	1
Benzene	0.00055	J	mg/kg	0.00074	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.00080	J	mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00074	0.00043	1
Ethylbenzene	ND		mg/kg	0.0015	0.00021	1
p/m-Xylene	ND		mg/kg	0.0030	0.00083	1
o-Xylene	ND		mg/kg	0.0015	0.00043	1
Xylenes, Total	ND		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.0035		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.00054	J	mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.00064	J	mg/kg	0.0030	0.00050	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-24
Client ID: GPR286-09-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 10:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 18:19
Analyst: JIC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.22	0.022	1
Benzene	0.14		mg/kg	0.054	0.018	1
1,2-Dichloroethane	ND		mg/kg	0.11	0.028	1
Toluene	1.0		mg/kg	0.11	0.059	1
1,2-Dibromoethane	ND		mg/kg	0.054	0.032	1
Ethylbenzene	0.28		mg/kg	0.11	0.015	1
p/m-Xylene	0.72		mg/kg	0.22	0.060	1
o-Xylene	0.56		mg/kg	0.11	0.031	1
Xylenes, Total	1.3		mg/kg	0.11	0.031	1
Isopropylbenzene	1.1		mg/kg	0.11	0.012	1
1,3,5-Trimethylbenzene	2.1		mg/kg	0.22	0.021	1
1,2,4-Trimethylbenzene	4.6		mg/kg	0.22	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-27
Client ID: FB-231130
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/05/23 18:45
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/05/23 10:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-27
Client ID: FB-231130
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 16:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/04/23 22:08
Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-28
Client ID: TB-231130
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 00:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/05/23 18:53
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/05/23 10:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-28
Client ID: TB-231130
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 00:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/04/23 22:32
Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/05/23 17:38
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/05/23 10:43

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 27-28 Batch: WG1859858-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/04/23 21:44
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 27-28 Batch: WG1860020-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 08:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05,07-11 Batch: WG1860465-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 08:55
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02-03,12-13 Batch: WG1860467-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2370894

Project Number: 200.00135.005.03 **Report Date:** 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:47
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,09,16-17 Batch: WG1860967-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2370894

Project Number: 200.00135.005.03 **Report Date:** 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:47
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 14,24 Batch: WG1860972-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2370894

Project Number: 200.00135.005.03 **Report Date:** 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 10:15
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 15,18-19,21-22 Batch: WG1860978-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**147**	Q	70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2370894

Project Number: 200.00135.005.03 **Report Date:** 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/23 10:09
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,04 Batch: WG1862942-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 27-28 Batch: WG1859858-2								
1,2-Dibromoethane	101		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 27-28 Batch: WG1860020-3 WG1860020-4								
Methyl tert butyl ether	93		110		63-130	17		20
Benzene	94		100		70-130	6		20
1,2-Dichloroethane	84		94		70-130	11		20
Toluene	100		110		70-130	10		20
Ethylbenzene	98		110		70-130	12		20
p/m-Xylene	95		105		70-130	10		20
o-Xylene	100		105		70-130	5		20
Isopropylbenzene	81		98		70-130	19		20
1,3,5-Trimethylbenzene	91		100		64-130	9		20
1,2,4-Trimethylbenzene	92		100		70-130	8		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		107		70-130
Toluene-d8	107		106		70-130
4-Bromofluorobenzene	88		102		70-130
Dibromofluoromethane	95		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05,07-11 Batch: WG1860465-3 WG1860465-4								
Methyl tert butyl ether	102		107		66-130	5		30
Benzene	82		90		70-130	9		30
1,2-Dichloroethane	83		92		70-130	10		30
Toluene	80		86		70-130	7		30
1,2-Dibromoethane	83		88		70-130	6		30
Ethylbenzene	85		92		70-130	8		30
p/m-Xylene	88		95		70-130	8		30
o-Xylene	89		97		70-130	9		30
Isopropylbenzene	85		91		70-130	7		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	86		92		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		95		70-130
Toluene-d8	95		96		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	112		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02-03,12-13 Batch: WG1860467-3 WG1860467-4								
Methyl tert butyl ether	102		107		66-130	5		30
Benzene	82		90		70-130	9		30
1,2-Dichloroethane	83		92		70-130	10		30
Toluene	80		86		70-130	7		30
1,2-Dibromoethane	83		88		70-130	6		30
Ethylbenzene	85		92		70-130	8		30
p/m-Xylene	88		95		70-130	8		30
o-Xylene	89		97		70-130	9		30
Isopropylbenzene	85		91		70-130	7		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	86		92		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		95		70-130
Toluene-d8	95		96		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	112		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,09,16-17 Batch: WG1860967-3 WG1860967-4								
Methyl tert butyl ether	**147**	Q	**146**	Q	66-130	1		30
Benzene	113		110		70-130	3		30
1,2-Dichloroethane	121		120		70-130	1		30
Toluene	100		99		70-130	1		30
1,2-Dibromoethane	107		106		70-130	1		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	106		103		70-130	3		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	96		93		70-130	3		30
1,3,5-Trimethylbenzene	95		92		70-130	3		30
1,2,4-Trimethylbenzene	95		93		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		118		70-130
Toluene-d8	93		94		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 14,24 Batch: WG1860972-3 WG1860972-4								
Methyl tert butyl ether	**147**	Q	**146**	Q	66-130	1		30
Benzene	113		110		70-130	3		30
1,2-Dichloroethane	121		120		70-130	1		30
Toluene	100		99		70-130	1		30
1,2-Dibromoethane	107		106		70-130	1		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	106		103		70-130	3		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	96		93		70-130	3		30
1,3,5-Trimethylbenzene	95		92		70-130	3		30
1,2,4-Trimethylbenzene	95		93		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		118		70-130
Toluene-d8	93		94		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	109		106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 15,18-19,21-22 Batch: WG1860978-3 WG1860978-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	95		89		70-130	7		30
1,2-Dichloroethane	111		112		70-130	1		30
Toluene	91		79		70-130	14		30
1,2-Dibromoethane	118		110		70-130	7		30
Ethylbenzene	92		82		70-130	11		30
p/m-Xylene	97		84		70-130	14		30
o-Xylene	92		87		70-130	6		30
Isopropylbenzene	84		83		70-130	1		30
1,3,5-Trimethylbenzene	87		94		70-130	8		30
1,2,4-Trimethylbenzene	90		95		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	121		127		70-130
Toluene-d8	102		93		70-130
4-Bromofluorobenzene	99		114		70-130
Dibromofluoromethane	106		108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,04 Batch: WG1862942-3 WG1862942-4								
Methyl tert butyl ether	127		115		66-130	10		30
Benzene	94		95		70-130	1		30
1,2-Dichloroethane	99		100		70-130	1		30
Toluene	90		90		70-130	0		30
1,2-Dibromoethane	91		90		70-130	1		30
Ethylbenzene	92		91		70-130	1		30
p/m-Xylene	92		93		70-130	1		30
o-Xylene	92		93		70-130	1		30
Isopropylbenzene	90		92		70-130	2		30
1,3,5-Trimethylbenzene	89		90		70-130	1		30
1,2,4-Trimethylbenzene	88		90		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		109		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	104		104		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-01
Client ID: GPR276-20-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/13/23 16:55
Analyst: EK
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/12/23 19:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.054		mg/kg	0.041	0.025	1
Fluorene	ND		mg/kg	0.20	0.020	1
Phenanthrene	0.061	J	mg/kg	0.12	0.025	1
Anthracene	ND		mg/kg	0.12	0.040	1
Pyrene	0.063	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.033	J	mg/kg	0.12	0.023	1
Chrysene	0.032	J	mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.034	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	91		30-120
4-Terphenyl-d14	83		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-02
Client ID: GPR276-20-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 08:00
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.1		mg/kg	0.050	0.030	1
Fluorene	0.13	J	mg/kg	0.25	0.024	1
Phenanthrene	0.47		mg/kg	0.15	0.030	1
Anthracene	0.23		mg/kg	0.15	0.048	1
Pyrene	0.51		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.47		mg/kg	0.15	0.028	1
Chrysene	0.55		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	1.0		mg/kg	0.15	0.042	1
Benzo(a)pyrene	0.94		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	0.77		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-03
Client ID: GPR276-21-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 08:17
Analyst: EK
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.6		mg/kg	0.046	0.028	1
Fluorene	0.23		mg/kg	0.23	0.022	1
Phenanthrene	1.3		mg/kg	0.14	0.028	1
Anthracene	0.39		mg/kg	0.14	0.044	1
Pyrene	2.1		mg/kg	0.14	0.023	1
Benzo(a)anthracene	1.6		mg/kg	0.14	0.026	1
Chrysene	1.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	2.8		mg/kg	0.14	0.038	1
Benzo(a)pyrene	2.6		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	1.7		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-04
Client ID: GPR276-21-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/13/23 16:31
Analyst: EK
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 12/12/23 19:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.21		mg/kg	0.041	0.025	1
Fluorene	0.18	J	mg/kg	0.21	0.020	1
Phenanthrene	2.9		mg/kg	0.12	0.025	1
Anthracene	0.40		mg/kg	0.12	0.040	1
Pyrene	3.6		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.0		mg/kg	0.12	0.023	1
Chrysene	2.4		mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	2.8		mg/kg	0.12	0.035	1
Benzo(a)pyrene	2.0		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	1.2		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-05
Client ID: GPR276-19-6.5-7.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:25
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 06:13
Analyst: EK
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.3		mg/kg	0.047	0.029	1
Fluorene	0.17	J	mg/kg	0.24	0.023	1
Phenanthrene	0.82		mg/kg	0.14	0.029	1
Anthracene	0.32		mg/kg	0.14	0.046	1
Pyrene	0.97		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.75		mg/kg	0.14	0.027	1
Chrysene	0.79		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.040	1
Benzo(a)pyrene	1.0		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.65		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-06
Client ID: GPR276-18-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 14:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 09:08
Analyst: EK
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.84		mg/kg	0.048	0.030	1
Fluorene	0.18	J	mg/kg	0.24	0.024	1
Phenanthrene	0.85		mg/kg	0.14	0.030	1
Anthracene	0.23		mg/kg	0.14	0.047	1
Pyrene	0.90		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.44		mg/kg	0.14	0.027	1
Chrysene	0.46		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.54		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.51		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.32		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-07
Client ID: GPR276-19-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:35
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 04:15
Analyst: EK
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.58		mg/kg	0.062	0.038	1
Fluorene	0.50		mg/kg	0.31	0.030	1
Phenanthrene	1.8		mg/kg	0.18	0.038	1
Anthracene	0.45		mg/kg	0.18	0.060	1
Pyrene	1.4		mg/kg	0.18	0.031	1
Benzo(a)anthracene	0.78		mg/kg	0.18	0.035	1
Chrysene	0.79		mg/kg	0.18	0.032	1
Benzo(b)fluoranthene	0.77		mg/kg	0.18	0.052	1
Benzo(a)pyrene	0.80		mg/kg	0.25	0.075	1
Benzo(ghi)perylene	0.35		mg/kg	0.25	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-08
Client ID: GPR276-19-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 04:32
Analyst: EK
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.38		mg/kg	0.048	0.029	1
Fluorene	0.18	J	mg/kg	0.24	0.024	1
Phenanthrene	1.5		mg/kg	0.14	0.029	1
Anthracene	0.40		mg/kg	0.14	0.047	1
Pyrene	1.6		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.97		mg/kg	0.14	0.027	1
Chrysene	0.92		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	1.2		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.96		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.49		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-09
Client ID: GPR276-18-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 14:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 09:59
Analyst: EK
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.50		mg/kg	0.049	0.030	1
Fluorene	0.050	J	mg/kg	0.25	0.024	1
Phenanthrene	0.32		mg/kg	0.15	0.030	1
Anthracene	0.14	J	mg/kg	0.15	0.048	1
Pyrene	0.48		mg/kg	0.15	0.024	1
Benzo(a)anthracene	0.38		mg/kg	0.15	0.028	1
Chrysene	0.37		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	0.66		mg/kg	0.15	0.042	1
Benzo(a)pyrene	0.59		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	0.28		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-10
Client ID: GPR276-18-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:05
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 03:58
Analyst: EK
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.67		mg/kg	0.056	0.034	1
Fluorene	0.18	J	mg/kg	0.28	0.027	1
Phenanthrene	0.73		mg/kg	0.17	0.034	1
Anthracene	0.22		mg/kg	0.17	0.055	1
Pyrene	0.59		mg/kg	0.17	0.028	1
Benzo(a)anthracene	0.29		mg/kg	0.17	0.032	1
Chrysene	0.33		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	0.31		mg/kg	0.17	0.047	1
Benzo(a)pyrene	0.34		mg/kg	0.22	0.069	1
Benzo(ghi)perylene	0.20	J	mg/kg	0.22	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-11
Client ID: GPR276-16R-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 14:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 03:24
Analyst: EK
Percent Solids: 56%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.27		mg/kg	0.060	0.036	1
Fluorene	0.091	J	mg/kg	0.30	0.029	1
Phenanthrene	0.36		mg/kg	0.18	0.036	1
Anthracene	0.085	J	mg/kg	0.18	0.058	1
Pyrene	0.40		mg/kg	0.18	0.030	1
Benzo(a)anthracene	0.22		mg/kg	0.18	0.034	1
Chrysene	0.22		mg/kg	0.18	0.031	1
Benzo(b)fluoranthene	0.24		mg/kg	0.18	0.050	1
Benzo(a)pyrene	0.24		mg/kg	0.24	0.073	1
Benzo(ghi)perylene	0.11	J	mg/kg	0.24	0.035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	88		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-12 D
Client ID: GPR276-16R-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 09:33
Analyst: ALS
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.3		mg/kg	0.28	0.17	5
Fluorene	0.60	J	mg/kg	1.4	0.14	5
Phenanthrene	2.1		mg/kg	0.85	0.17	5
Anthracene	1.6		mg/kg	0.85	0.28	5
Pyrene	11.		mg/kg	0.85	0.14	5
Benzo(a)anthracene	8.9		mg/kg	0.85	0.16	5
Chrysene	11.		mg/kg	0.85	0.15	5
Benzo(b)fluoranthene	15.		mg/kg	0.85	0.24	5
Benzo(a)pyrene	15.		mg/kg	1.1	0.34	5
Benzo(ghi)perylene	8.2		mg/kg	1.1	0.16	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-13
Client ID: GPR276-16R-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 10:16
Analyst: EK
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.76		mg/kg	0.048	0.029	1
Fluorene	0.080	J	mg/kg	0.24	0.023	1
Phenanthrene	0.34		mg/kg	0.14	0.029	1
Anthracene	0.12	J	mg/kg	0.14	0.046	1
Pyrene	0.41		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.28		mg/kg	0.14	0.027	1
Chrysene	0.37		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.43		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.46		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.21		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-14 D
Client ID: GPR276-16R-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 09:57
Analyst: ALS
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.11	5
Fluorene	ND		mg/kg	0.91	0.088	5
Phenanthrene	ND		mg/kg	0.54	0.11	5
Anthracene	ND		mg/kg	0.54	0.18	5
Pyrene	ND		mg/kg	0.54	0.090	5
Benzo(a)anthracene	ND		mg/kg	0.54	0.10	5
Chrysene	0.10	J	mg/kg	0.54	0.094	5
Benzo(b)fluoranthene	ND		mg/kg	0.54	0.15	5
Benzo(a)pyrene	ND		mg/kg	0.72	0.22	5
Benzo(ghi)perylene	ND		mg/kg	0.72	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-15
Client ID: TG06-MW02-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 09:42
Analyst: EK
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.038	0.023	1
Fluorene	0.058	J	mg/kg	0.19	0.018	1
Phenanthrene	0.48		mg/kg	0.11	0.023	1
Anthracene	0.13		mg/kg	0.11	0.037	1
Pyrene	0.43		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.27		mg/kg	0.11	0.022	1
Chrysene	0.24		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.32		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.26		mg/kg	0.15	0.047	1
Benzo(ghi)perylene	0.22		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-16 D
Client ID: TG06-MW02-6.0-6.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 10:45
Analyst: ALS
Percent Solids: 57%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.3		mg/kg	0.29	0.18	5
Fluorene	0.64	J	mg/kg	1.5	0.14	5
Phenanthrene	1.8		mg/kg	0.88	0.18	5
Anthracene	0.85	J	mg/kg	0.88	0.28	5
Pyrene	2.2		mg/kg	0.88	0.14	5
Benzo(a)anthracene	0.84	J	mg/kg	0.88	0.16	5
Chrysene	1.2		mg/kg	0.88	0.15	5
Benzo(b)fluoranthene	1.1		mg/kg	0.88	0.25	5
Benzo(a)pyrene	1.0	J	mg/kg	1.2	0.36	5
Benzo(ghi)perylene	0.68	J	mg/kg	1.2	0.17	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	85		30-120
4-Terphenyl-d14	85		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-17 D
Client ID: TG06-MW02-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 11:25
Analyst: HNY
Percent Solids: 74%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.22	0.13	5
Fluorene	0.17	J	mg/kg	1.1	0.11	5
Phenanthrene	0.88		mg/kg	0.66	0.13	5
Anthracene	0.39	J	mg/kg	0.66	0.21	5
Pyrene	1.7		mg/kg	0.66	0.11	5
Benzo(a)anthracene	1.2		mg/kg	0.66	0.12	5
Chrysene	1.2		mg/kg	0.66	0.11	5
Benzo(b)fluoranthene	1.8		mg/kg	0.66	0.18	5
Benzo(a)pyrene	1.6		mg/kg	0.88	0.27	5
Benzo(ghi)perylene	1.2		mg/kg	0.88	0.13	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	66		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-18
Client ID: GPR286-17-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 11:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 05:06
Analyst: EK
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.1		mg/kg	0.047	0.029	1
Fluorene	0.079	J	mg/kg	0.24	0.023	1
Phenanthrene	0.45		mg/kg	0.14	0.029	1
Anthracene	0.15		mg/kg	0.14	0.046	1
Pyrene	0.55		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.45		mg/kg	0.14	0.026	1
Chrysene	0.46		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.71		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.64		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.36		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-19
Client ID: TG06-MW02-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 06:30
Analyst: EK
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.9		mg/kg	0.055	0.034	1
Fluorene	0.26	J	mg/kg	0.28	0.027	1
Phenanthrene	1.2		mg/kg	0.16	0.033	1
Anthracene	0.51		mg/kg	0.16	0.054	1
Pyrene	2.0		mg/kg	0.16	0.027	1
Benzo(a)anthracene	1.6		mg/kg	0.16	0.031	1
Chrysene	1.7		mg/kg	0.16	0.029	1
Benzo(b)fluoranthene	2.4		mg/kg	0.16	0.046	1
Benzo(a)pyrene	2.6		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	1.5		mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-21
Client ID: GPR286-14-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 11:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 05:23
Analyst: EK
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.6		mg/kg	0.044	0.027	1
Fluorene	0.069	J	mg/kg	0.22	0.021	1
Phenanthrene	0.36		mg/kg	0.13	0.027	1
Anthracene	0.13		mg/kg	0.13	0.043	1
Pyrene	0.41		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.35		mg/kg	0.13	0.025	1
Chrysene	0.36		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	0.56		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.51		mg/kg	0.18	0.054	1
Benzo(ghi)perylene	0.33		mg/kg	0.18	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	80		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-22
Client ID: GPR286-15-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 05:39
Analyst: EK
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.3		mg/kg	0.047	0.029	1
Fluorene	0.14	J	mg/kg	0.24	0.023	1
Phenanthrene	0.65		mg/kg	0.14	0.029	1
Anthracene	0.23		mg/kg	0.14	0.046	1
Pyrene	0.85		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.78		mg/kg	0.14	0.027	1
Chrysene	0.76		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	1.2		mg/kg	0.14	0.040	1
Benzo(a)pyrene	1.1		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.59		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	80		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-24
Client ID: GPR286-09-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 10:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 05:56
Analyst: EK
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 05:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.9		mg/kg	0.048	0.029	1
Fluorene	0.15	J	mg/kg	0.24	0.023	1
Phenanthrene	0.74		mg/kg	0.14	0.029	1
Anthracene	0.28		mg/kg	0.14	0.047	1
Pyrene	0.86		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.78		mg/kg	0.14	0.027	1
Chrysene	0.80		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	1.3		mg/kg	0.14	0.040	1
Benzo(a)pyrene	1.2		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.82		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	75		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-27
Client ID: FB-231130
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 16:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/05/23 13:59
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/04/23 15:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	82		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/05/23 01:07
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 12/02/23 16:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-03,06-16,18 Batch: WG1859028-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	82		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/05/23 00:16
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05,17,19,21-22,24 Batch: WG1859295-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/05/23 12:14
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 12/04/23 15:47

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 27 Batch: WG1859584-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	76		15-120
4-Terphenyl-d14	87		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/12/23 22:10
Analyst: LJG

Extraction Method: EPA 3546
Extraction Date: 12/12/23 05:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,04 Batch: WG1862714-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	79		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03,06-16,18 Batch: WG1859028-2 WG1859028-3								
Naphthalene	71		73		40-140	3		50
Fluorene	70		72		40-140	3		50
Phenanthrene	72		74		40-140	3		50
Anthracene	74		76		40-140	3		50
Pyrene	77		76		35-142	1		50
Benzo(a)anthracene	73		75		40-140	3		50
Chrysene	73		75		40-140	3		50
Benzo(b)fluoranthene	79		80		40-140	1		50
Benzo(a)pyrene	86		91		40-140	6		50
Benzo(ghi)perylene	68		71		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	75		80		23-120
2-Fluorobiphenyl	70		73		30-120
4-Terphenyl-d14	75		74		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05,17,19,21-22,24 Batch: WG1859295-2 WG1859295-3								
Naphthalene	76		84		40-140	10		50
Fluorene	83		84		40-140	1		50
Phenanthrene	86		85		40-140	1		50
Anthracene	90		89		40-140	1		50
Pyrene	90		92		35-142	2		50
Benzo(a)anthracene	90		87		40-140	3		50
Chrysene	89		86		40-140	3		50
Benzo(b)fluoranthene	94		91		40-140	3		50
Benzo(a)pyrene	110		100		40-140	10		50
Benzo(ghi)perylene	87		77		40-140	12		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	75		84		23-120
2-Fluorobiphenyl	75		78		30-120
4-Terphenyl-d14	81		82		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 27 Batch: WG1859584-2 WG1859584-3								
Naphthalene	70		63		40-140	11		40
Fluorene	72		66		40-140	9		40
Phenanthrene	75		67		40-140	11		40
Anthracene	80		73		40-140	9		40
Pyrene	77		71		26-127	8		40
Benzo(a)anthracene	80		73		40-140	9		40
Chrysene	72		65		40-140	10		40
Benzo(b)fluoranthene	83		79		40-140	5		40
Benzo(a)pyrene	82		74		40-140	10		40
Benzo(ghi)perylene	80		75		40-140	6		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	91		84		23-120
2-Fluorobiphenyl	64		68		15-120
4-Terphenyl-d14	81		74		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04 Batch: WG1862714-2 WG1862714-3								
Naphthalene	67		72		40-140	7		50
Fluorene	68		71		40-140	4		50
Phenanthrene	67		70		40-140	4		50
Anthracene	70		72		40-140	3		50
Pyrene	74		76		35-142	3		50
Benzo(a)anthracene	71		74		40-140	4		50
Chrysene	71		74		40-140	4		50
Benzo(b)fluoranthene	69		77		40-140	11		50
Benzo(a)pyrene	78		82		40-140	5		50
Benzo(ghi)perylene	70		74		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	68		72		23-120
2-Fluorobiphenyl	76		79		30-120
4-Terphenyl-d14	78		79		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-01
Client ID: GPR276-20-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	8.29		mg/kg	2.39	0.128	1	12/13/23 00:49	12/13/23 11:53	EPA 3050B	1,6010D	DHL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-02
Client ID: GPR276-20-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	181		mg/kg	2.93	0.157	1	12/05/23 02:34	12/05/23 21:07	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-03
Client ID: GPR276-21-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 16:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	71.1		mg/kg	2.78	0.149	1	12/05/23 02:34	12/05/23 20:54	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-04
Client ID: GPR276-21-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 16:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	82.4		mg/kg	2.44	0.131	1	12/13/23 00:49	12/13/23 11:56	EPA 3050B	1,6010D	DHL

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-05
Client ID: GPR276-19-6.5-7.0
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 15:25
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	280		mg/kg	2.86	0.153	1	12/05/23 02:34	12/05/23 20:58	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-06
Client ID: GPR276-18-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 14:55
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	359		mg/kg	2.86	0.153	1	12/05/23 02:34	12/05/23 21:03	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-07
Client ID: GPR276-19-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:35
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	157		mg/kg	3.70	0.198	1	12/05/23 02:34	12/05/23 21:42	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-08
Client ID: GPR276-19-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	315		mg/kg	2.86	0.153	1	12/05/23 02:34	12/05/23 21:47	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-09
Client ID: GPR276-18-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 14:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	88.1		mg/kg	3.05	0.163	1	12/05/23 02:34	12/05/23 21:52	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-10
Client ID: GPR276-18-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 15:05
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	280		mg/kg	3.32	0.178	1	12/05/23 02:34	12/05/23 21:56	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-11
Client ID: GPR276-16R-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 14:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 56%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	254		mg/kg	3.55	0.190	1	12/05/23 02:34	12/05/23 22:01	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-12
Client ID: GPR276-16R-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	307		mg/kg	3.45	0.185	1	12/05/23 02:34	12/05/23 22:07	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-13
Client ID: GPR276-16R-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 13:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	205		mg/kg	2.82	0.151	1	12/05/23 02:34	12/05/23 22:12	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-14
Client ID: GPR276-16R-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 13:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.9		mg/kg	2.21	0.118	1	12/05/23 02:34	12/05/23 22:17	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-15
Client ID: TG06-MW02-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 12:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	112		mg/kg	2.27	0.122	1	12/05/23 02:34	12/05/23 22:22	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-16
Client ID: TG06-MW02-6.0-6.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 12:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	390		mg/kg	3.39	0.182	1	12/05/23 02:34	12/05/23 22:27	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-17
Client ID: TG06-MW02-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 11/30/23 12:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	167		mg/kg	2.61	0.140	1	12/05/23 02:34	12/05/23 22:45	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-18
Client ID: GPR286-17-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 11:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	252		mg/kg	2.82	0.151	1	12/05/23 02:34	12/05/23 22:50	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-19
Client ID: TG06-MW02-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 13:00
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	152		mg/kg	3.19	0.171	1	12/05/23 02:34	12/05/23 23:03	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-21
Client ID: GPR286-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 11:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	138		mg/kg	2.57	0.138	1	12/05/23 02:34	12/05/23 23:08	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-22
Client ID: GPR286-15-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	216		mg/kg	2.73	0.146	1	12/05/23 02:34	12/05/23 23:12	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2370894
Project Number: 200.00135.005.03
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-24
Client ID: GPR286-09-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 11/30/23 10:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	263		mg/kg	2.88	0.154	1	12/05/23 02:34	12/05/23 23:17	EPA 3050B	1,6010D	JTS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-27
Client ID: FB-231130
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 11/30/23 16:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/06/23 07:56	12/06/23 13:05	EPA 3005A	1,6020B	EJF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 27 Batch: WG1859514-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/06/23 07:56	12/06/23 11:50	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-03,05-19,21-22,24 Batch: WG1859568-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/05/23 02:34	12/05/23 20:45	1,6010D	JTS

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,04 Batch: WG1862607-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/13/23 00:49	12/13/23 10:58	1,6010D	DHL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 27 Batch: WG1859514-2								
Lead, Total	109		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 02-03,05-19,21-22,24 Batch: WG1859568-2 SRM Lot Number: D122-540								
Lead, Total	89		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 01,04 Batch: WG1862607-2 SRM Lot Number: D122-540								
Lead, Total	98		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 27 QC Batch ID: WG1859514-3 QC Sample: L2371038-01 Client ID: MS Sample												
Lead, Total	111.0	530	606.3	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-03,05-19,21-22,24 QC Batch ID: WG1859568-3 QC Sample: L2370894-02 Client ID: GPR276-20-3.0-3.5												
Lead, Total	181	62.5	260	**126**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,04 QC Batch ID: WG1862607-3 QC Sample: L2373002-01 Client ID: MS Sample												
Lead, Total	7.31	49.4	68.1	123		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 27 QC Batch ID: WG1859514-4 QC Sample: L2371038-01 Client ID: DUP Sample						
Lead, Total	111.0	110.3	ug/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 02-03,05-19,21-22,24 QC Batch ID: WG1859568-4 QC Sample: L2370894-02 Client ID: GPR276-20-3.0-3.5						
Lead, Total	181	192	mg/kg	6		20
Total Metals - Mansfield Lab Associated sample(s): 01,04 QC Batch ID: WG1862607-4 QC Sample: L2373002-01 Client ID: DUP Sample						
Lead, Total	7.31	7.53	mg/kg	3		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2370894
Report Date: 12/17/23

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 27 QC Batch ID: WG1859514-6 QC Sample: L2371038-01 Client ID: DUP Sample						
Lead, Total	111.0	109.1	ug/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 02-03,05-19,21-22,24 QC Batch ID: WG1859568-6 QC Sample: L2370894-02 Client ID: GPR276-20-3.0-3.5						
Lead, Total	181	194	mg/kg	7		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-01
Client ID: GPR276-20-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 15:45
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.5		%	0.100	NA	1	-	12/12/23 10:49	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-02
Client ID: GPR276-20-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 15:55
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.8		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-03
Client ID: GPR276-21-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 16:20
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.2		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-04
Client ID: GPR276-21-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 16:10
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	12/12/23 10:49	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-05
Client ID: GPR276-19-6.5-7.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 15:25
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.9		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-06
Client ID: GPR276-18-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 14:55
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.2		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-07
Client ID: GPR276-19-9.5-10.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 15:35
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.4		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-08
Client ID: GPR276-19-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/23 15:15
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-09
Client ID: GPR276-18-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 14:45
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.5		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-10
Client ID: GPR276-18-9.5-10.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/23 15:05
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.0		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-11
Client ID: GPR276-16R-9.5-10.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 14:00
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	55.8		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-12
Client ID: GPR276-16R-5.0-5.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 13:50
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.4		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-13
Client ID: GPR276-16R-2.0-2.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/23 13:40
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.7		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-14
Client ID: GPR276-16R-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 13:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.0		%	0.100	NA	1	-	12/05/23 11:47	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-15
Client ID: TG06-MW02-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 12:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.3		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-16
Client ID: TG06-MW02-6.0-6.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 12:50
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	56.5		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-17
Client ID: TG06-MW02-2.0-2.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 12:40
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.9		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-18
Client ID: GPR286-17-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 11:50
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-19
Client ID: TG06-MW02-9.5-10.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 13:00
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	60.3		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-21
Client ID: GPR286-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 11:10
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.0		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-22
Client ID: GPR286-15-2.0-2.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 11/30/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.2		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2370894
Report Date: 12/17/23

SAMPLE RESULTS

Lab ID: L2370894-24
Client ID: GPR286-09-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 11/30/23 10:45
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.0		%	0.100	NA	1	-	12/05/23 12:50	121,2540G	GAG

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2370894

Report Date: 12/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03,05-14 QC Batch ID: WG1859938-1 QC Sample: L2370630-03 Client ID: DUP Sample						
Solids, Total	87.9	87.9	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 15-19,21-22,24 QC Batch ID: WG1859983-1 QC Sample: L2370876-01 Client ID: DUP Sample						
Solids, Total	82.1	83.0	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01,04 QC Batch ID: WG1862847-1 QC Sample: L2372766-01 Client ID: DUP Sample						
Solids, Total	80.0	79.9	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-01A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-01B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-01C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-01D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-01E	Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-01F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-02A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-02B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-02C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-02D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-02F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-03A	Vial MeOH preserved	D	NA		3.3	Y	Absent		PA-8260HLW(14)
L2370894-03B	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-03C	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-03D	Plastic 120ml unpreserved	D	NA		3.3	Y	Absent		TS(7)
L2370894-03E	Metals Only-Glass 60mL/2oz unpreserved	D	NA		3.3	Y	Absent		PB-TI(180)
L2370894-03F	Glass 120ml/4oz unpreserved	D	NA		3.3	Y	Absent		PA-PAH(14)
L2370894-04A	Vial MeOH preserved	C	NA		2.7	Y	Absent		PA-8260HLW(14)
L2370894-04B	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-04C	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-04D	Plastic 120ml unpreserved	C	NA		2.7	Y	Absent		TS(7)
L2370894-04E	Glass 60mL/2oz unpreserved	C	NA		2.7	Y	Absent		PB-TI(180)
L2370894-04F	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		PA-PAH(14)
L2370894-05A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-05B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-05C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-05D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-05F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-06A	Vial MeOH preserved	C	NA		2.7	Y	Absent		PA-8260HLW(14)
L2370894-06B	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-06C	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-06D	Plastic 120ml unpreserved	C	NA		2.7	Y	Absent		TS(7)
L2370894-06E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.7	Y	Absent		PB-TI(180)
L2370894-06F	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		PA-PAH(14)
L2370894-07A	Vial MeOH preserved	C	NA		2.7	Y	Absent		PA-8260HLW(14)
L2370894-07B	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-07C	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-07D	Plastic 120ml unpreserved	C	NA		2.7	Y	Absent		TS(7)
L2370894-07E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.7	Y	Absent		PB-TI(180)
L2370894-07F	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		PA-PAH(14)
L2370894-08A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-08B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-08C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-08D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-08E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-08F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-09A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-09B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-09C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-09D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-09F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-10A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-10B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-10C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-10D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-10F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-11A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-11B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-11C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-11D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-11F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-12A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-12B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-12C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-12D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-12F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-13A	Vial MeOH preserved	D	NA		3.3	Y	Absent		PA-8260HLW(14)
L2370894-13B	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-13C	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-13D	Plastic 120ml unpreserved	D	NA		3.3	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-13E	Metals Only-Glass 60mL/2oz unpreserved	D	NA		3.3	Y	Absent		PB-TI(180)
L2370894-13F	Glass 120ml/4oz unpreserved	D	NA		3.3	Y	Absent		PA-PAH(14)
L2370894-14A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-14B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-14C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-14D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-14E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-14F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-15A	Vial MeOH preserved	D	NA		3.3	Y	Absent		PA-8260HLW(14)
L2370894-15B	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-15C	Vial water preserved	D	NA		3.3	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-15D	Plastic 120ml unpreserved	D	NA		3.3	Y	Absent		TS(7)
L2370894-15E	Metals Only-Glass 60mL/2oz unpreserved	D	NA		3.3	Y	Absent		PB-TI(180)
L2370894-15F	Glass 120ml/4oz unpreserved	D	NA		3.3	Y	Absent		PA-PAH(14)
L2370894-16A	Vial MeOH preserved	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2370894-16B	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-16C	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-16D	Plastic 120ml unpreserved	A	NA		5.2	Y	Absent		TS(7)
L2370894-16E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2370894-16F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2370894-17A	Vial MeOH preserved	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2370894-17B	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-17C	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-17D	Plastic 120ml unpreserved	A	NA		5.2	Y	Absent		TS(7)
L2370894-17E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2370894-17F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2370894-18A	Vial MeOH preserved	C	NA		2.7	Y	Absent		PA-8260HLW(14)
L2370894-18B	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-18C	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-18D	Plastic 120ml unpreserved	C	NA		2.7	Y	Absent		TS(7)
L2370894-18E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.7	Y	Absent		PB-TI(180)
L2370894-18F	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		PA-PAH(14)
L2370894-19A	Vial MeOH preserved	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2370894-19B	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-19C	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-19D	Plastic 120ml unpreserved	A	NA		5.2	Y	Absent		TS(7)
L2370894-19E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2370894-19F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2370894-20A	Vial MeOH preserved	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2370894-20B	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-20C	Vial water preserved	A	NA		5.2	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-20D	Plastic 120ml unpreserved	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2370894-20E	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		HOLD-METAL(180)
L2370894-20F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2370894-21A	Vial MeOH preserved	C	NA		2.7	Y	Absent		PA-8260HLW(14)
L2370894-21B	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-21C	Vial water preserved	C	NA		2.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-21D	Plastic 120ml unpreserved	C	NA		2.7	Y	Absent		TS(7)
L2370894-21E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		2.7	Y	Absent		PB-TI(180)
L2370894-21F	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		PA-PAH(14)
L2370894-22A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-22B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-22C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-22D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-22E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-22F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-23A	Vial MeOH preserved	B	NA		4.7	Y	Absent		HOLD-8260HLW(14)
L2370894-23B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-23C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-23D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		HOLD-WETCHEM()
L2370894-23E	Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		HOLD-METAL(180)
L2370894-23F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		HOLD-8270(14)
L2370894-24A	Vial MeOH preserved	B	NA		4.7	Y	Absent		PA-8260HLW(14)
L2370894-24B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-24C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	PA-8260HLW(14)
L2370894-24D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		TS(7)
L2370894-24E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		PB-TI(180)
L2370894-24F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		PA-PAH(14)
L2370894-25A	Vial MeOH preserved	B	NA		4.7	Y	Absent		HOLD-8260HLW(14)
L2370894-25B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-25C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-25D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		HOLD-WETCHEM()
L2370894-25E	Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		HOLD-METAL(180)
L2370894-25F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		HOLD-8270(14)
L2370894-26A	Vial MeOH preserved	B	NA		4.7	Y	Absent		HOLD-8260HLW(14)
L2370894-26B	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-26C	Vial water preserved	B	NA		4.7	Y	Absent	02-DEC-23 03:16	HOLD-8260HLW(14)
L2370894-26D	Plastic 120ml unpreserved	B	NA		4.7	Y	Absent		HOLD-WETCHEM()
L2370894-26E	Glass 60mL/2oz unpreserved	B	NA		4.7	Y	Absent		HOLD-METAL(180)
L2370894-26F	Glass 120ml/4oz unpreserved	B	NA		4.7	Y	Absent		HOLD-8270(14)
L2370894-27A	Vial HCl preserved	C	NA		2.7	Y	Absent		PA-8260(14)
L2370894-27B	Vial HCl preserved	C	NA		2.7	Y	Absent		PA-8260(14)
L2370894-27C	Vial HCl preserved	C	NA		2.7	Y	Absent		8011(14)
L2370894-27D	Plastic 250ml HNO3 preserved	C	<2	<2	2.7	Y	Absent		PB-6020T-PPB(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2370894
Report Date: 12/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2370894-27E	Amber 250ml unpreserved	C	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2370894-27F	Amber 250ml unpreserved	C	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2370894-28A	Vial Na2S2O3 preserved	C	NA		2.7	Y	Absent		PA-8260(7)
L2370894-28B	Vial Na2S2O3 preserved	D	NA		3.3	Y	Absent		PA-8260(7)
L2370894-28C	Vial Na2S2O3 preserved	D	NA		3.3	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2370894
Project Number:	200.00135.005.03	**Report Date:**	12/17/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 3

Date Rec'd in Lab: 12/1/23

ALPHA Job #: L2370894

Client Information
Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-8090
Fax:
Email: william.schmidt@ransomenv.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
PAHs by 8270E/SIM (1-5 Cases w/Hotspots)

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PAHs by 8270E/SIM (1-5 Cases w/Hotspots)	Sample Specific Comments	Total Bottle
70894-01	GPR276-20-0.5-1.0*	11/30/23	15:45	S	ND	H	Hold	6
-02	GPR276-20-3.0-3.5*		15:55			X		6
-03	GPR276-21-2.5-3.0*		16:20			X		6
-04	GPR276-21-0.5-1.0*		16:10			H	Hold	6
-05	GPR276-19-6.5-7.0*		15:25			X		6
-06	GPR276-18-4.5-5.0*		14:55			X		6
-07	GPR276-19-9.5-10.0*		15:35			X		6
-08	GPR276-19-0.5-1.0*		15:15			X		6
-09	GPR276-18-0.5-1.0*		14:45			X		6
-10	GPR276-18-9.5-10.0*		15:05			X		6

Container Type: G
Preservative: AB

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Michael Dingle	11/30/23 18:55	Dan Hilland JR	12/1/23 901
Dan Hilland JR	12/1/23 1545	Paul Marcella	12/1/23 1645
Paul Marcella	12/1/23		
	12/1/23 2215		12/1/23 2215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW JERSEY CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 3

Date Rec'd in Lab 12/1/23

ALPHA Job # L2370894

Client Information
Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0020
Fax:
Email: william.schmidt@ransomenv.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
PADEP SVOA 1-5 (see attached)

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP SVOA 1-5	Sample Specific Comments	Total Bottle
70894-11	GPR276-16R-9.5-10.0*	11/30/23	14:00	S	ND	X		6
-12	GPR276-16R-5.0-5.5*		13:50			X		6
-13	GPR276-16R-2.0-2.5*		13:40			X		6
-14	GPR276-16R-0.5-1.0*		13:30			X		6
-15	TG06-MW02-0.5-1.0*		12:30			X		6
-16	TG06-MW03-6.0-6.5*		12:50			X		6
-17	TG06-MW02-2.0-2.5*		12:40			X		6
-18	GPR286-17-4.5-5.0*		11:50			X		6
-19	TG06-MW02-9.5-10.0*		13:00			X		6
-20	GPR286-17-0.5-1.0*	↓	11:40	↓	↓	H	Hold	6

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: G
Preservative: HB

Relinquished By:	Date/Time	Received By:	Date/Time
Nicholas Dingle	11/30/23 18:55	Paul Mazzella	12/1/23 901
Paul Mazzella	12/1/23 1545	Paul Mazzella	12/1/23 1645
Paul Mazzella	12/1/23		12/1/23 2015
	12/1/23 2215		12/1/23 2215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 3 of 3

Date Rec'd in Lab: 12/1/23

ALPHA Job #: L2370894

Client Information

Client: Ransom Consulting LLC
Address: 2129 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0020
Fax:
Email: william.schmidt@ransomenv.com

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard
Rush (only if pre approved)
Due Date:
# of Days:

Deliverables

NJ Full / Reduced
EQuIS (1 File)
EQuIS (4 File)
Other

Regulatory Requirement

SRS Residential/Non Residential
SRS Impact to Groundwater
NJ Ground Water Quality Standards
NJ IGW SPLP Leachate Criteria
Other

Billing Information

Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes
Petroleum Product:

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:
Category 1
Category 2

For VOC, selection is REQUIRED:
1,4-Dioxane
8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

PAHs (naphthalene 1-5 methylnaphthalene)

Sample Filtration
Done
Lab to do
Preservation
Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PAHs	Sample Specific Comments	Total Bottle
708914-21	GPR 256-14-4.5-5.0'	11/30/23	11:10	S	NJ	X		6
-22	GPR 256-15-2.0-2.5'		11:30			X		6
-23	GPR 256-14-0.5-1.0'		11:00			H	Hold	6
-24	GPR 256-09-3.0-3.5'		10:45			X		6
-25	GPR 256-09-0.5-1.0'		10:35			H	Hold	6
-26	GPR 256-15-0.5-1.0'		11:20			H	Hold	6
-27	~~Field Blank~~ FB-231130		16:30	blank		X		6
-28	~~Trip Blank~~ TB-231130		16:30	blank		X		3

Container Type: G
Preservative: AB

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	11/30/23 18:55	[illegible]	12/1/23 901
[illegible] ATL	12/1/23 1545	Paul Maggella	12/1/23 1605
Paul Maggella 12/1/23		[illegible]	12/1/23 2205
[illegible] 12/1/23		[illegible]	12/1/23 2215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

PADEP Shortlist 1-5

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Naphthalene
Phenanthrene
Pyrene

Lead

PADEP Shortlist 1-6

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Lead

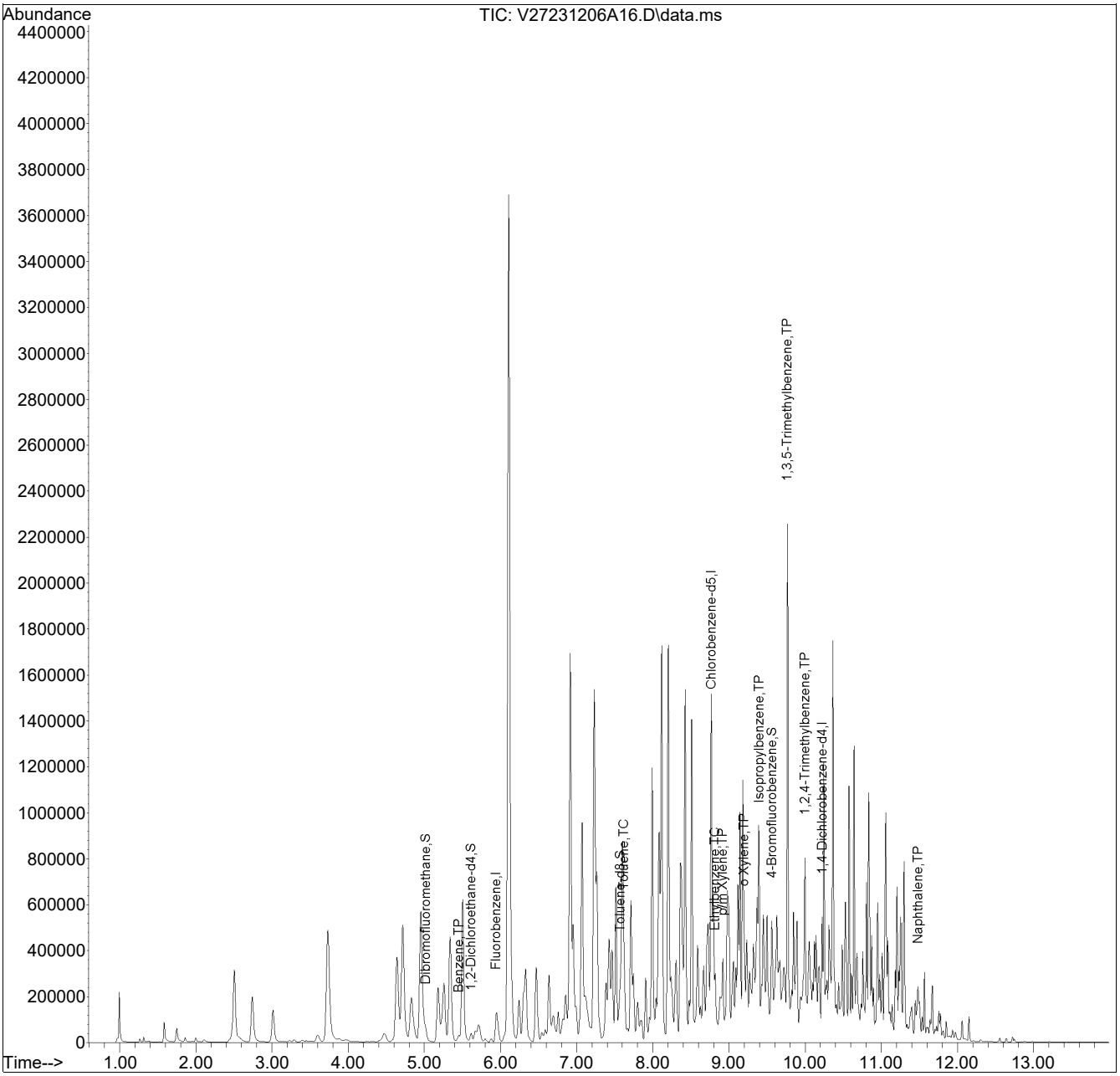
Serial_No:12172318:14

Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231206A\
Data File : V27231206A16.D
Acq On : 06 Dec 2023 12:42 pm
Operator : VOA127:TMS
Sample : L2370894-02D,31H,4.52,5,0.01,,A
Misc : WG1860467,ICAL20585
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 06 13:02:56 2023
Quant Method : K:\VOA127\2023\231206A\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

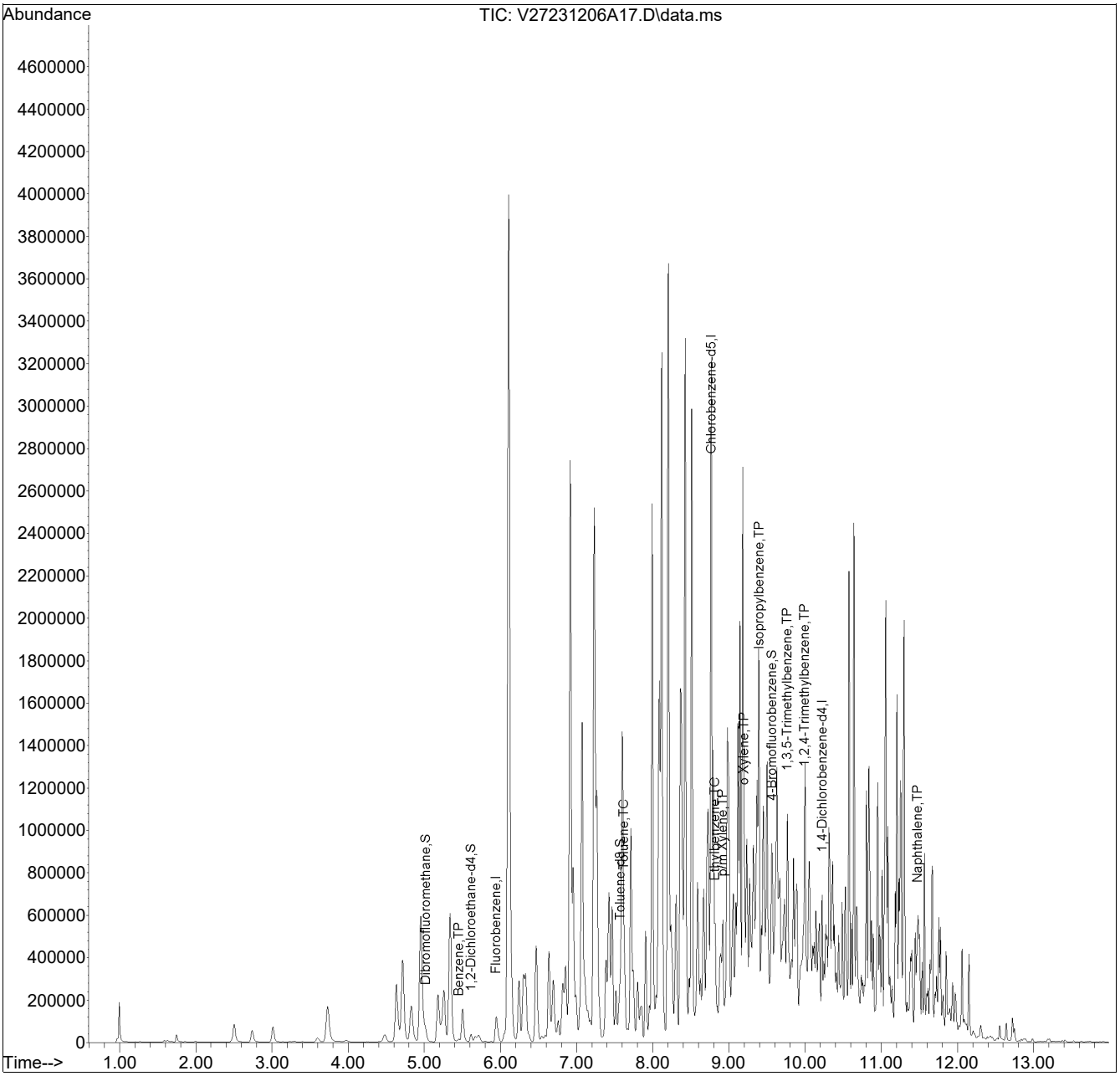


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231206A\
Data File : V27231206A17.D
Acq On : 06 Dec 2023 01:02 pm
Operator : VOA127:TMS
Sample : L2370894-03D,31H,4.27,5,0.02,,A
Misc : WG1860467,ICAL20585
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 06 13:57:00 2023
Quant Method : K:\VOA127\2023\231206A\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

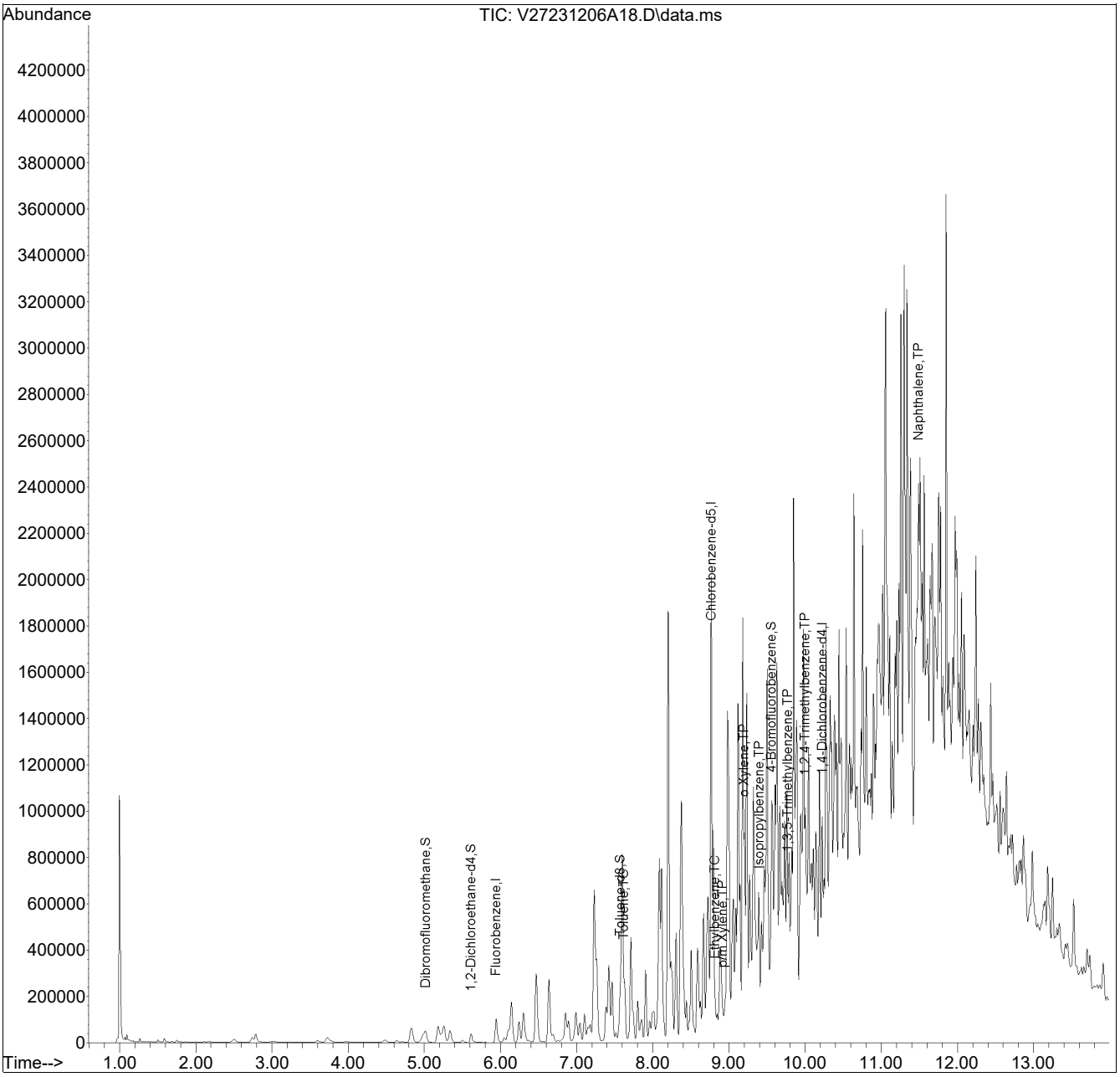


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231206A\
Data File : V27231206A18.D
Acq On : 06 Dec 2023 01:23 pm
Operator : VOA127:TMS
Sample : L2370894-05,31,4.23,5,,B
Misc : WG1860465,ICAL20585
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 06 14:09:39 2023
Quant Method : K:\VOA127\2023\231206A\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

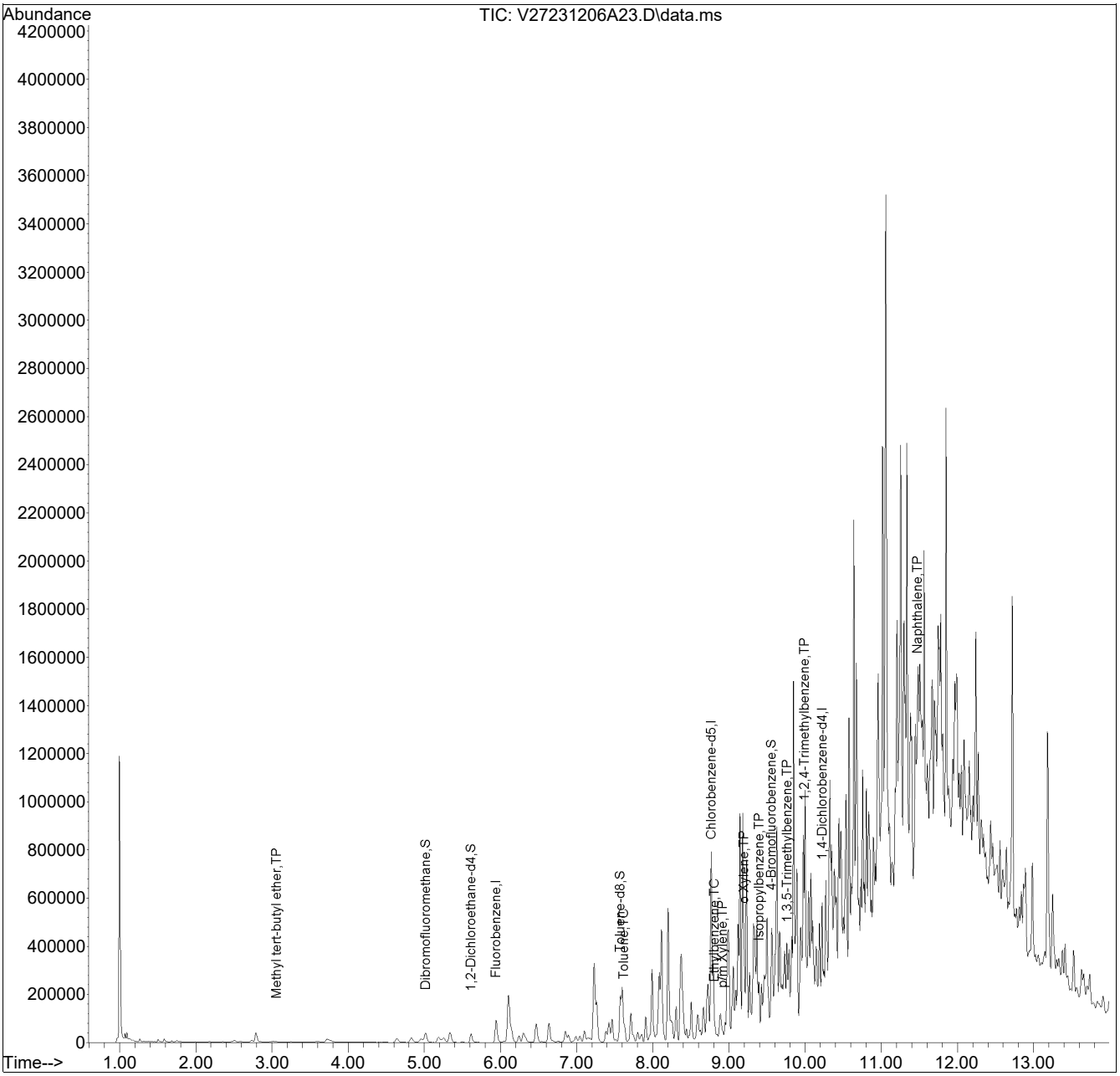


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231206A\
Data File : V27231206A23.D
Acq On : 06 Dec 2023 03:06 pm
Operator : VOA127:TMS
Sample : L2370894-10,31,4.70,5,,C
Misc : WG1860465,ICAL20585
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 06 15:25:29 2023
Quant Method : K:\VOA127\2023\231206A\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

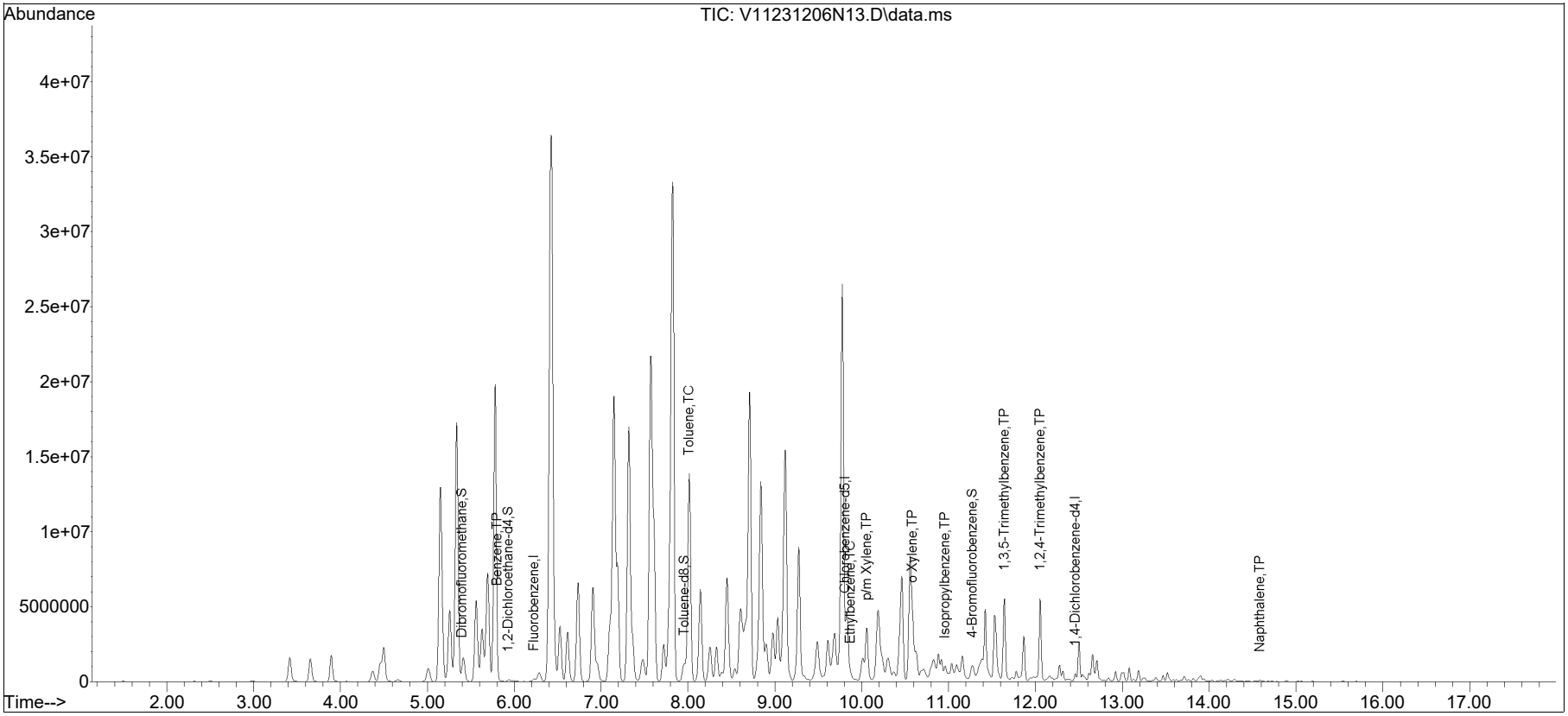


Quantitation Report (QT Reviewed)

Data Path : K:\VOA111\2023\231206N\
Data File : V11231206N13.D
Acq On : 06 Dec 2023 06:44 pm
Operator : VOA111:JIC
Sample : L2370894-14,31H,5.97,5,0.100,,A
Misc : WG1860972,ICAL20576
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 07 08:11:35 2023
Quant Method : K:\VOA111\2023\231206N\V111_231121Q_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed Nov 22 07:05:49 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206N03.D•



ANALYTICAL REPORT

Lab Number:	L2371111
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.005.03
Report Date:	12/13/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2371111-01	TG06-MW03-0.5-1.0	SOIL	PHILADELPHIA, PA	12/01/23 10:30	12/01/23
L2371111-02	TG06-MW03-9.0-9.5	SOIL	PHILADELPHIA, PA	12/01/23 10:40	12/01/23
L2371111-03	TG06-MW03-9.5-10.0	SOIL	PHILADELPHIA, PA	12/01/23 10:50	12/01/23
L2371111-04	GPR284-16-0.5-1.0	SOIL	PHILADELPHIA, PA	12/01/23 11:20	12/01/23
L2371111-05	GPR284-16-7.5-8.0	SOIL	PHILADELPHIA, PA	12/01/23 11:30	12/01/23
L2371111-06	GPR284-16-9.5-10.0	SOIL	PHILADELPHIA, PA	12/01/23 11:40	12/01/23
L2371111-07	GPR284-17-0.5-1.0	SOIL	PHILADELPHIA, PA	12/01/23 12:00	12/01/23
L2371111-08	GPR284-17-2.5-3.0	SOIL	PHILADELPHIA, PA	12/01/23 12:15	12/01/23
L2371111-09	GPR282-13-0.5-1.0	SOIL	PHILADELPHIA, PA	12/01/23 12:55	12/01/23
L2371111-10	GPR282-13-3.0-3.5	SOIL	PHILADELPHIA, PA	12/01/23 13:10	12/01/23
L2371111-11	GPR281-13-0.5-1.0	SOIL	PHILADELPHIA, PA	12/01/23 13:30	12/01/23
L2371111-12	GPR281-13-3.5-4.0	SOIL	PHILADELPHIA, PA	12/01/23 13:45	12/01/23
L2371111-13	FB-231201	WATER	PHILADELPHIA, PA	12/01/23 13:45	12/01/23
L2371111-14	TB-231201	WATER	PHILADELPHIA, PA	12/01/23 13:45	12/01/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

Case Narrative (continued)

Report Submission

December 13, 2023: This final report includes the results of all requested analyses.

December 11, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2371111-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (174%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371111-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (140%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371111-05: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (143%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables

L2371111-13: The sample was improperly preserved. The 8011 compounds were analyzed from an HCl preserved vial at the client's request.

Semivolatile Organics

L2371111-10D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Semivolatile Organics by SIM

The WG1861610-1 Method Blank, associated with L2371111-13, has a concentrations above the reporting

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371111
Project Number: 200.00135.005.03 **Report Date:** 12/13/23

Case Narrative (continued)

limits for Benzo(a)anthracene and Benzo(b)fluoranthene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals

The WG1859630-3 MS recovery for lead (0%), performed on L2371111-01, does not apply because the sample concentration is greater than four times the spike amount added.

The WG1859630-4 Laboratory Duplicate RPD for lead (27%), performed on L2371111-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 12/13/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-01
Client ID: TG06-MW03-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 14:32
Analyst: LAC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	ND		mg/kg	0.00095	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00028	1
Ethylbenzene	0.00018	J	mg/kg	0.00095	0.00013	1
p/m-Xylene	0.00074	J	mg/kg	0.0019	0.00053	1
o-Xylene	0.00060	J	mg/kg	0.00095	0.00028	1
Xylenes, Total	0.0013	J	mg/kg	0.00095	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	0.00019	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.00060	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**134**	Q	70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	**151**	Q	70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-02
Client ID: TG06-MW03-9.0-9.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 14:55
Analyst: LAC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00082	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00089	1
1,2-Dibromoethane	ND		mg/kg	0.00082	0.00048	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00092	1
o-Xylene	0.0019		mg/kg	0.0016	0.00048	1
Xylenes, Total	0.0019		mg/kg	0.0016	0.00048	1
Isopropylbenzene	0.0048		mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.00080	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0013	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**174**	Q	70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-03
Client ID: TG06-MW03-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:18
Analyst: LAC
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00039	1
Benzene	ND		mg/kg	0.00096	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00049	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00096	0.00056	1
Ethylbenzene	0.00032	J	mg/kg	0.0019	0.00027	1
p/m-Xylene	0.0022	J	mg/kg	0.0038	0.0011	1
o-Xylene	0.0029		mg/kg	0.0019	0.00056	1
Xylenes, Total	0.0051	J	mg/kg	0.0019	0.00056	1
Isopropylbenzene	0.0046		mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0038	0.00037	1
1,2,4-Trimethylbenzene	0.0039		mg/kg	0.0038	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**140**	Q	70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-04
Client ID: GPR284-16-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 11:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 19:35
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00079	1
o-Xylene	ND		mg/kg	0.0014	0.00041	1
Xylenes, Total	ND		mg/kg	0.0014	0.00041	1
Isopropylbenzene	0.00029	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-05
Client ID: GPR284-16-7.5-8.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 20:01
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	0.00094	J	mg/kg	0.0023	0.00064	1
o-Xylene	0.0012		mg/kg	0.0011	0.00033	1
Xylenes, Total	0.0021	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.0020		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00094	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.0015	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**143**	Q	70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-06
Client ID: GPR284-16-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 11:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 16:29
Analyst: LAC
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00033	1
Benzene	ND		mg/kg	0.00081	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00042	1
Toluene	ND		mg/kg	0.0016	0.00088	1
1,2-Dibromoethane	ND		mg/kg	0.00081	0.00048	1
Ethylbenzene	0.00027	J	mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00091	1
o-Xylene	0.0011	J	mg/kg	0.0016	0.00047	1
Xylenes, Total	0.0011	J	mg/kg	0.0016	0.00047	1
Isopropylbenzene	0.00041	J	mg/kg	0.0016	0.00018	1
1,3,5-Trimethylbenzene	0.00046	J	mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0011	J	mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**145**	Q	70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	**132**	Q	70-130
Dibromofluoromethane	122		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-08
Client ID: GPR284-17-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 12:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 16:52
Analyst: LAC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	ND		mg/kg	0.00052	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00027	1
Toluene	ND		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00052	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00015	1
p/m-Xylene	ND		mg/kg	0.0021	0.00058	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0021	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**142**	Q	70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-10
Client ID: GPR282-13-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 13:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 20:26
Analyst: JIC
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00063	0.00021	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00068	1
1,2-Dibromoethane	ND		mg/kg	0.00063	0.00037	1
Ethylbenzene	ND		mg/kg	0.0012	0.00018	1
p/m-Xylene	ND		mg/kg	0.0025	0.00070	1
o-Xylene	0.00075	J	mg/kg	0.0012	0.00036	1
Xylenes, Total	0.00075	J	mg/kg	0.0012	0.00036	1
Isopropylbenzene	0.00032	J	mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0025	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-12
Client ID: GPR281-13-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/06/23 17:39
Analyst: LAC
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0031	0.00032	1
Benzene	ND		mg/kg	0.00079	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00040	1
Toluene	ND		mg/kg	0.0016	0.00085	1
1,2-Dibromoethane	ND		mg/kg	0.00079	0.00046	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0031	0.00088	1
o-Xylene	ND		mg/kg	0.0016	0.00046	1
Xylenes, Total	ND		mg/kg	0.0016	0.00046	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00038	J	mg/kg	0.0031	0.00030	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0031	0.00052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**142**	Q	70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	117		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-13
Client ID: FB-231201
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/05/23 19:01
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/05/23 10:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-13
Client ID: FB-231201
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/07/23 14:16
Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-14
Client ID: TB-231201
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/13/23 10:57
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/05/23 17:38
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/05/23 10:43

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 13 Batch: WG1859858-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371111

Project Number: 200.00135.005.03 **Report Date:** 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 15:47
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05,10 Batch: WG1860967-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371111

Project Number: 200.00135.005.03 **Report Date:** 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/06/23 10:15
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,06,08,12 Batch: WG1860978-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**147**	Q	70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	120		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371111

Project Number: 200.00135.005.03 **Report Date:** 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/07/23 08:09
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13 Batch: WG1861405-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371111

Project Number: 200.00135.005.03 **Report Date:** 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/13/23 09:38
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 14 Batch: WG1863456-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 13		Batch: WG1859858-2						
1,2-Dibromoethane	101		-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05,10 Batch: WG1860967-3 WG1860967-4								
Methyl tert butyl ether	**147**	Q	**146**	Q	66-130	1		30
Benzene	113		110		70-130	3		30
1,2-Dichloroethane	121		120		70-130	1		30
Toluene	100		99		70-130	1		30
1,2-Dibromoethane	107		106		70-130	1		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	106		103		70-130	3		30
o-Xylene	102		100		70-130	2		30
Isopropylbenzene	96		93		70-130	3		30
1,3,5-Trimethylbenzene	95		92		70-130	3		30
1,2,4-Trimethylbenzene	95		93		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		118		70-130
Toluene-d8	93		94		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,06,08,12 Batch: WG1860978-3 WG1860978-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	95		89		70-130	7		30
1,2-Dichloroethane	111		112		70-130	1		30
Toluene	91		79		70-130	14		30
1,2-Dibromoethane	118		110		70-130	7		30
Ethylbenzene	92		82		70-130	11		30
p/m-Xylene	97		84		70-130	14		30
o-Xylene	92		87		70-130	6		30
Isopropylbenzene	84		83		70-130	1		30
1,3,5-Trimethylbenzene	87		94		70-130	8		30
1,2,4-Trimethylbenzene	90		95		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	121		127		70-130
Toluene-d8	102		93		70-130
4-Bromofluorobenzene	99		114		70-130
Dibromofluoromethane	106		108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13 Batch: WG1861405-3 WG1861405-4								
Methyl tert butyl ether	99		110		63-130	11		20
Benzene	110		120		70-130	9		20
1,2-Dichloroethane	91		95		70-130	4		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
p/m-Xylene	115		115		70-130	0		20
o-Xylene	115		115		70-130	0		20
Isopropylbenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88		93		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	101		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 14 Batch: WG1863456-3 WG1863456-4								
Methyl tert butyl ether	90		93		63-130	3		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	93		92		70-130	1		20
Toluene	120		110		70-130	9		20
1,2-Dibromoethane	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	100		95		70-130	5		20
Isopropylbenzene	100		96		70-130	4		20
1,3,5-Trimethylbenzene	100		96		64-130	4		20
1,2,4-Trimethylbenzene	100		97		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86		90		70-130
Toluene-d8	111		110		70-130
4-Bromofluorobenzene	106		104		70-130
Dibromofluoromethane	96		93		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-01
Client ID: TG06-MW03-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 11:09
Analyst: ALS
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.73		mg/kg	0.040	0.024	1
Fluorene	0.48		mg/kg	0.20	0.020	1
Phenanthrene	0.74		mg/kg	0.12	0.024	1
Anthracene	0.93		mg/kg	0.12	0.039	1
Pyrene	2.5		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.3		mg/kg	0.12	0.023	1
Chrysene	2.5		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	2.2		mg/kg	0.12	0.034	1
Benzo(a)pyrene	2.0		mg/kg	0.16	0.049	1
Benzo(ghi)perylene	0.89		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-02
Client ID: TG06-MW03-9.0-9.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 11:33
Analyst: ALS
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.99		mg/kg	0.050	0.030	1
Fluorene	0.16	J	mg/kg	0.25	0.024	1
Phenanthrene	0.60		mg/kg	0.15	0.030	1
Anthracene	0.20		mg/kg	0.15	0.049	1
Pyrene	0.88		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.47		mg/kg	0.15	0.028	1
Chrysene	0.62		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	0.57		mg/kg	0.15	0.042	1
Benzo(a)pyrene	0.59		mg/kg	0.20	0.061	1
Benzo(ghi)perylene	0.35		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-03
Client ID: TG06-MW03-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 04:49
Analyst: HNY
Percent Solids: 54%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.061	0.037	1
Fluorene	0.18	J	mg/kg	0.31	0.030	1
Phenanthrene	0.88		mg/kg	0.18	0.037	1
Anthracene	0.25		mg/kg	0.18	0.060	1
Pyrene	0.85		mg/kg	0.18	0.030	1
Benzo(a)anthracene	0.37		mg/kg	0.18	0.034	1
Chrysene	0.42		mg/kg	0.18	0.032	1
Benzo(b)fluoranthene	0.45		mg/kg	0.18	0.052	1
Benzo(a)pyrene	0.45		mg/kg	0.24	0.075	1
Benzo(ghi)perylene	0.28		mg/kg	0.24	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	76		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-04
Client ID: GPR284-16-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 11:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 11:57
Analyst: ALS
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.53		mg/kg	0.040	0.024	1
Fluorene	0.20		mg/kg	0.20	0.019	1
Phenanthrene	1.2		mg/kg	0.12	0.024	1
Anthracene	0.35		mg/kg	0.12	0.039	1
Pyrene	1.4		mg/kg	0.12	0.020	1
Benzo(a)anthracene	1.0		mg/kg	0.12	0.022	1
Chrysene	1.0		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.99		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.95		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.50		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-05
Client ID: GPR284-16-7.5-8.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 16:20
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.4		mg/kg	0.041	0.025	1
Fluorene	1.3		mg/kg	0.20	0.020	1
Phenanthrene	4.7		mg/kg	0.12	0.025	1
Anthracene	1.4		mg/kg	0.12	0.040	1
Pyrene	7.8		mg/kg	0.12	0.020	1
Benzo(a)anthracene	5.8		mg/kg	0.12	0.023	1
Chrysene	5.6		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	5.3		mg/kg	0.12	0.034	1
Benzo(a)pyrene	5.3		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	2.3		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-06
Client ID: GPR284-16-9.5-10.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 11:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 03:41
Analyst: HNY
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.82		mg/kg	0.050	0.031	1
Fluorene	0.099	J	mg/kg	0.25	0.024	1
Phenanthrene	0.42		mg/kg	0.15	0.031	1
Anthracene	0.12	J	mg/kg	0.15	0.049	1
Pyrene	0.53		mg/kg	0.15	0.025	1
Benzo(a)anthracene	0.24		mg/kg	0.15	0.028	1
Chrysene	0.28		mg/kg	0.15	0.026	1
Benzo(b)fluoranthene	0.33		mg/kg	0.15	0.042	1
Benzo(a)pyrene	0.30		mg/kg	0.20	0.062	1
Benzo(ghi)perylene	0.18	J	mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-08
Client ID: GPR284-17-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 12:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 08:34
Analyst: HNY
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.74		mg/kg	0.039	0.024	1
Fluorene	0.11	J	mg/kg	0.20	0.019	1
Phenanthrene	0.77		mg/kg	0.12	0.024	1
Anthracene	0.36		mg/kg	0.12	0.038	1
Pyrene	1.3		mg/kg	0.12	0.019	1
Benzo(a)anthracene	1.2		mg/kg	0.12	0.022	1
Chrysene	1.1		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	1.6		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.6		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.81		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-10 D
Client ID: GPR282-13-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 13:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/05/23 10:33
Analyst: HNY
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.4		mg/kg	0.088	0.053	2
Fluorene	0.29	J	mg/kg	0.44	0.042	2
Phenanthrene	1.4		mg/kg	0.26	0.053	2
Anthracene	0.51		mg/kg	0.26	0.085	2
Pyrene	1.5		mg/kg	0.26	0.043	2
Benzo(a)anthracene	0.78		mg/kg	0.26	0.049	2
Chrysene	1.1		mg/kg	0.26	0.046	2
Benzo(b)fluoranthene	1.2		mg/kg	0.26	0.074	2
Benzo(a)pyrene	1.2		mg/kg	0.35	0.11	2
Benzo(ghi)perylene	0.48		mg/kg	0.35	0.051	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	50		30-120
4-Terphenyl-d14	44		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-12
Client ID: GPR281-13-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/08/23 16:44
Analyst: JG
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.6		mg/kg	0.051	0.031	1
Fluorene	0.11	J	mg/kg	0.26	0.025	1
Phenanthrene	0.47		mg/kg	0.15	0.031	1
Anthracene	0.22		mg/kg	0.15	0.050	1
Pyrene	0.62		mg/kg	0.15	0.026	1
Benzo(a)anthracene	0.66		mg/kg	0.15	0.029	1
Chrysene	0.65		mg/kg	0.15	0.027	1
Benzo(b)fluoranthene	0.92		mg/kg	0.15	0.043	1
Benzo(a)pyrene	0.83		mg/kg	0.20	0.063	1
Benzo(ghi)perylene	0.50		mg/kg	0.20	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-13
Client ID: FB-231201
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 15:27
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 14:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	JB	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	59		15-120
4-Terphenyl-d14	70		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/05/23 00:16
Analyst: ALS

Extraction Method: EPA 3546
Extraction Date: 12/04/23 03:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06,08,10,12 Batch: WG1859295-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	92		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 14:38
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 14:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13 Batch: WG1861610-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	0.01	J	ug/l	0.10	0.01
Phenanthrene	0.02	J	ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.06	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.09		ug/l	0.05	0.02
Chrysene	0.06	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.09		ug/l	0.05	0.01
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02
Benzo(ghi)perylene	0.06	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08,10,12 Batch: WG1859295-2 WG1859295-3								
Naphthalene	76		84		40-140	10		50
Fluorene	83		84		40-140	1		50
Phenanthrene	86		85		40-140	1		50
Anthracene	90		89		40-140	1		50
Pyrene	90		92		35-142	2		50
Benzo(a)anthracene	90		87		40-140	3		50
Chrysene	89		86		40-140	3		50
Benzo(b)fluoranthene	94		91		40-140	3		50
Benzo(a)pyrene	110		100		40-140	10		50
Benzo(ghi)perylene	87		77		40-140	12		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	75		84		23-120
2-Fluorobiphenyl	75		78		30-120
4-Terphenyl-d14	81		82		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13 Batch: WG1861610-2 WG1861610-3								
Naphthalene	66		60		40-140	10		40
Fluorene	70		66		40-140	6		40
Phenanthrene	73		68		40-140	7		40
Anthracene	79		74		40-140	7		40
Pyrene	78		74		26-127	5		40
Benzo(a)anthracene	80		76		40-140	5		40
Chrysene	74		69		40-140	7		40
Benzo(b)fluoranthene	88		78		40-140	12		40
Benzo(a)pyrene	81		76		40-140	6		40
Benzo(ghi)perylene	80		76		40-140	5		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		76		23-120
2-Fluorobiphenyl	68		63		15-120
4-Terphenyl-d14	73		70		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-01
Client ID: TG06-MW03-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	221		mg/kg	2.39	0.128	1	12/05/23 23:25	12/06/23 17:39	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-02
Client ID: TG06-MW03-9.0-9.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/01/23 10:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	176		mg/kg	3.00	0.161	1	12/05/23 23:25	12/06/23 17:29	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-03
Client ID: TG06-MW03-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 10:50
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	459		mg/kg	3.60	0.193	1	12/05/23 23:25	12/06/23 17:34	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-04
Client ID: GPR284-16-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	339		mg/kg	2.39	0.128	1	12/05/23 23:25	12/06/23 18:14	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-05
Client ID: GPR284-16-7.5-8.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	84.2		mg/kg	2.38	0.128	1	12/05/23 23:25	12/06/23 18:19	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-06
Client ID: GPR284-16-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	317		mg/kg	2.99	0.160	1	12/05/23 23:25	12/06/23 18:24	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-08
Client ID: GPR284-17-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 12:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	96.8		mg/kg	2.36	0.127	1	12/05/23 23:25	12/06/23 18:29	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-10
Client ID: GPR282-13-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:10
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	438		mg/kg	2.62	0.141	1	12/05/23 23:25	12/06/23 18:33	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-12
Client ID: GPR281-13-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	445		mg/kg	3.03	0.162	1	12/05/23 23:25	12/06/23 18:38	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371111
Project Number: 200.00135.005.03
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-13
Client ID: FB-231201
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/06/23 07:56	12/06/23 14:27	EPA 3005A	1,6020B	EJF

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 13 Batch: WG1859514-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/06/23 07:56	12/06/23 11:50	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06,08,10,12 Batch: WG1859630-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/05/23 23:25	12/06/23 17:15	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13 Batch: WG1859514-2								
Lead, Total	109		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-06,08,10,12 Batch: WG1859630-2 SRM Lot Number: D122-540								
Lead, Total	107		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13 QC Batch ID: WG1859514-3 QC Sample: L2371038-01 Client ID: MS Sample												
Lead, Total	111.0	530	606.3	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-06,08,10,12 QC Batch ID: WG1859630-3 QC Sample: L2371111-01 Client ID: TG06-MW03-0.5-1.0												
Lead, Total	221	50.3	206	**0**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13 QC Batch ID: WG1859514-4 QC Sample: L2371038-01 Client ID: DUP Sample						
Lead, Total	111.0	110.3	ug/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01-06,08,10,12 QC Batch ID: WG1859630-4 QC Sample: L2371111-01 Client ID: TG06-MW03-0.5-1.0						
Lead, Total	221	169	mg/kg	**27**	Q	20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2371111
Report Date: 12/13/23

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13 QC Batch ID: WG1859514-6 QC Sample: L2371038-01 Client ID: DUP Sample						
Lead, Total	111.0	109.1	ug/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-01
Client ID: TG06-MW03-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/23 10:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-02
Client ID: TG06-MW03-9.0-9.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/01/23 10:40
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.8		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-03
Client ID: TG06-MW03-9.5-10.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/23 10:50
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.7		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-04
Client ID: GPR284-16-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:20
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-05
Client ID: GPR284-16-7.5-8.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/01/23 11:30
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.7		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-06
Client ID: GPR284-16-9.5-10.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 11:40
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-08
Client ID: GPR284-17-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 12:15
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-10
Client ID: GPR282-13-3.0-3.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/01/23 13:10
Date Received: 12/01/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.5		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03
Lab Number: L2371111
Report Date: 12/13/23

SAMPLE RESULTS

Lab ID: L2371111-12
Client ID: GPR281-13-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/01/23 13:45
Date Received: 12/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.6		%	0.100	NA	1	-	12/04/23 22:07	121,2540G	WJM

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005.03

Lab Number: L2371111

Report Date: 12/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08,10,12 QC Batch ID: WG1859666-1 QC Sample: L2371089-02 Client ID: DUP Sample						
Solids, Total	88.0	89.2	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371111-01A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2371111-01B	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-01C	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-01D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2371111-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2371111-01F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2371111-02A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2371111-02B	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-02C	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-02D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2371111-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2371111-02F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2371111-03A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2371111-03B	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-03C	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-03D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2371111-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2371111-03F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2371111-04A	Vial MeOH preserved	B	NA		4.1	Y	Absent		PA-8260HLW(14)
L2371111-04B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-04C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-04D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371111-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		PB-TI(180)
L2371111-04F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		PA-PAH(14)
L2371111-05A	Vial MeOH preserved	B	NA		4.1	Y	Absent		PA-8260HLW(14)
L2371111-05B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-05C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-05D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		TS(7)
L2371111-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		PB-TI(180)
L2371111-05F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		PA-PAH(14)
L2371111-06A	Vial MeOH preserved	B	NA		4.1	Y	Absent		PA-8260HLW(14)
L2371111-06B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-06C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-06D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		TS(7)
L2371111-06E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		PB-TI(180)
L2371111-06F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		PA-PAH(14)
L2371111-07A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2371111-07B	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)
L2371111-07C	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)
L2371111-07D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2371111-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2371111-07F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		HOLD-8270(14)
L2371111-08A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2371111-08B	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-08C	Vial water preserved	A	NA		2.6	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-08D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2371111-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2371111-08F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2371111-09A	Vial MeOH preserved	B	NA		4.1	Y	Absent		HOLD-8260HLW(14)
L2371111-09B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371111-09C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)
L2371111-09D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		HOLD-WETCHEM()
L2371111-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		HOLD-METAL(180)
L2371111-09F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		HOLD-8270(14)
L2371111-10A	Vial MeOH preserved	B	NA		4.1	Y	Absent		PA-8260HLW(14)
L2371111-10B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-10C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-10D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		TS(7)
L2371111-10E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		PB-TI(180)
L2371111-10F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		PA-PAH(14)
L2371111-11A	Vial MeOH preserved	B	NA		4.1	Y	Absent		HOLD-8260HLW(14)
L2371111-11B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)
L2371111-11C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	HOLD-8260HLW(14)
L2371111-11D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		HOLD-WETCHEM()
L2371111-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		HOLD-METAL(180)
L2371111-11F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		HOLD-8270(14)
L2371111-12A	Vial MeOH preserved	B	NA		4.1	Y	Absent		PA-8260HLW(14)
L2371111-12B	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-12C	Vial water preserved	B	NA		4.1	Y	Absent	02-DEC-23 13:17	PA-8260HLW(14)
L2371111-12D	Plastic 120ml unpreserved	B	NA		4.1	Y	Absent		TS(7)
L2371111-12E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.1	Y	Absent		PB-TI(180)
L2371111-12F	Glass 120ml/4oz unpreserved	B	NA		4.1	Y	Absent		PA-PAH(14)
L2371111-13A	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)
L2371111-13B	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)
L2371111-13C	Vial Na2S2O3 preserved	A	NA		2.6	Y	Absent		8011(14)
L2371111-13D	Amber 250ml unpreserved	A	6	6	2.6	Y	Absent		PA-PAHSIM-LVI(7)
L2371111-13E	Amber 250ml unpreserved	A	6	6	2.6	Y	Absent		PA-PAHSIM-LVI(7)
L2371111-13F	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		PB-6020T-PPB(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005.03

Lab Number: L2371111
Report Date: 12/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371111-14A	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371111
Project Number:	200.00135.005.03	**Report Date:**	12/13/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 12/02/23

ALPHA Job #: L2371111

Client Information

Client: Ramsey Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0080
Fax:
Email: william.schmidt@ramseyconsulting.com

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135
(Use Project name as Project #) ☐
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS

Please Specify Metals or TAL (1-5) (Lead Required)

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Please Specify Metals or TAL (1-5) (Lead Required)	Sample Specific Comments	Total Bottle
11111-01	TG06-MW03-0.5-1.0	12/01/23	10:50	S	ND	X		6
-02	TG06-MW03-9.2-9.5		10:40			X		6
-03	TG04-MW03-9.5-10.0		10:50			X		6
-04	GPR284-16-0.5-1.0		11:20			X		6
-05	GPR284-16-7.5-8.0		11:30			X		6
-06	GPR284-16-9.5-10.0		11:40			X		6
-07	GPR284-17-0.5-1.0		12:00			H	Hold	6
-08	GPR284-17-2.5-3.0		12:15			X		6
-09	GPR282-13-0.5-1.0		12:55			H	Hold	6
-10	GPR282-13-3.0-3.5	↓	13:10	↓	↓	X		6

Container Type: G
Preservative: B

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	12/01/23 15:15		12/1/23 1515
	12/1/23 1800		12/1-1800
Anthony Green	12-1-2300	Anthony Green	DEC 01 2023 2300
Anthony Green	12/2 0045		12/2 0045
	12/2/23 0245		12/2/23 0245

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab: 12/02/23

ALPHA Job #: L2371111

Client Information
Client: Ramsey Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ramseyenv.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135
(Use Project name as Project #) ☐
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED: ☐ Category 1 ☐ Category 2

For VOC, selection is REQUIRED: ☐ 1,4-Dioxane ☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done ☐ Lab to do
Preservation ☐ Lab to do
(Please Specify below)

ANALYSIS: PADEP Analytes 1-5 (see attached)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total Bottle
L2371111-11	GPR281-13-0.5-1.0	12/01/23	13:30	S	ND	Hold	6
-12	GPR281-13-3.5-4.0		13:45	S	ND		6
	~~GPR281-14-0.5-1.0~~					~~Hold~~	~~6~~
	~~GPR281-14-~~						~~6~~
-13	FB-231201		15:00	blank	ND		6
-14	TB-231201		15:00	blank	ND		3

Container Type: G
Preservative: AB

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Michael Dale	12/01/23 15:15	MF AFC	12/1/23 1515
MF AFC	12/1/23 1800	MF AFC	12-1-1800
MF AFC	12-1-2300	Anthony Green	DEC 01 2023 2300
Anthony Green	12/2 0045		12/2 0045
	12/2/23 0245		12/2/23 0245

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

L2371111

PADEP Shortlist 1-5

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Naphthalene
Phenanthrene
Pyrene

Lead

PADEP Shortlist 1-6

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Lead

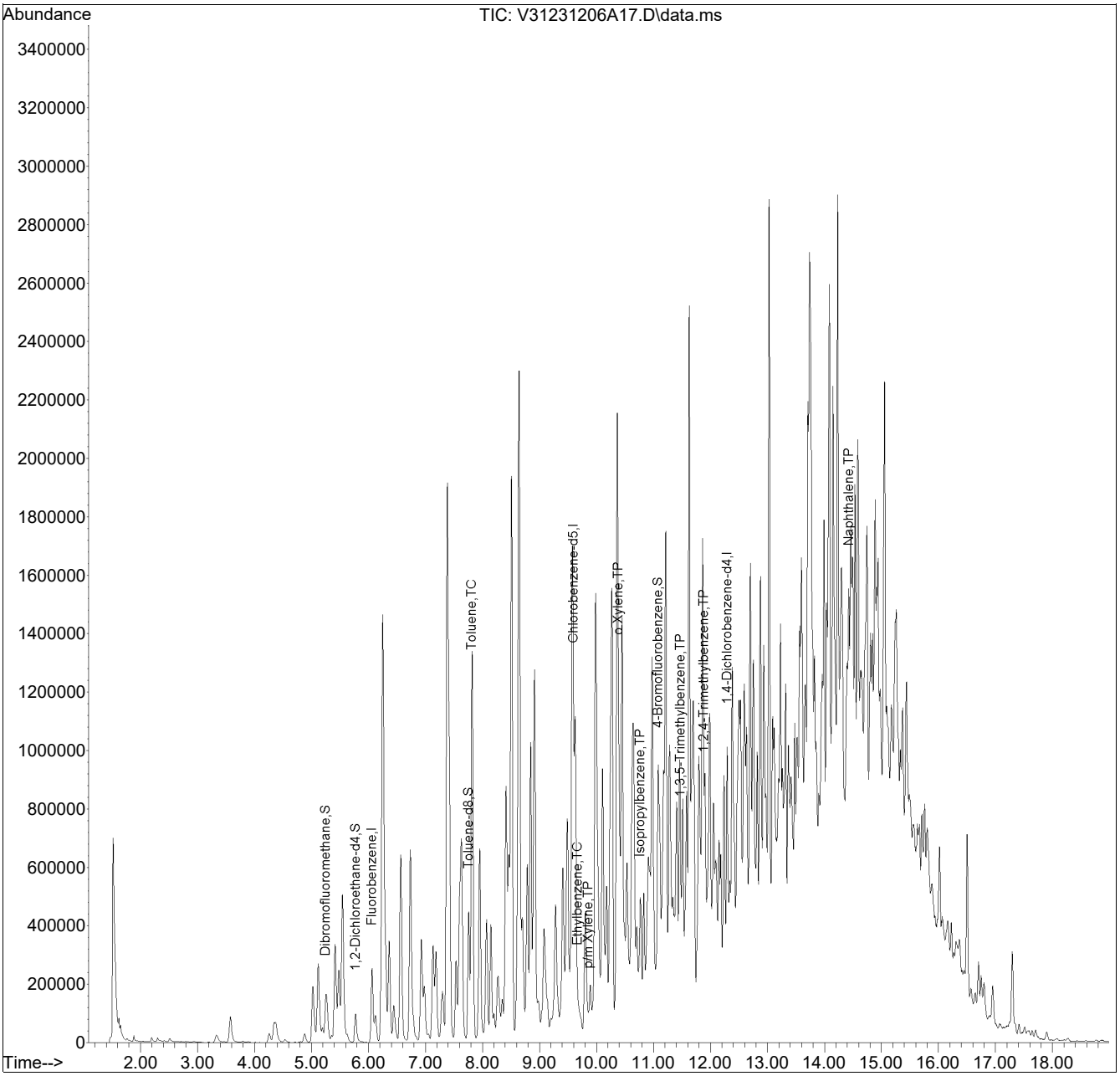
Serial_No:12132313:50

Quantitation Report (QT Reviewed)

Data Path : K:\VOA131\2023\231206A\
Data File : V31231206A17.D
Acq On : 06 Dec 2023 02:55 pm
Operator : VOA131:LAC
Sample : l2371111-02,31,4.64,5,,c
Misc : WG1860978,ICAL20586
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 06 15:20:44 2023
Quant Method : K:\VOA131\2023\231206A\V31_231122D_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 10:16:56 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

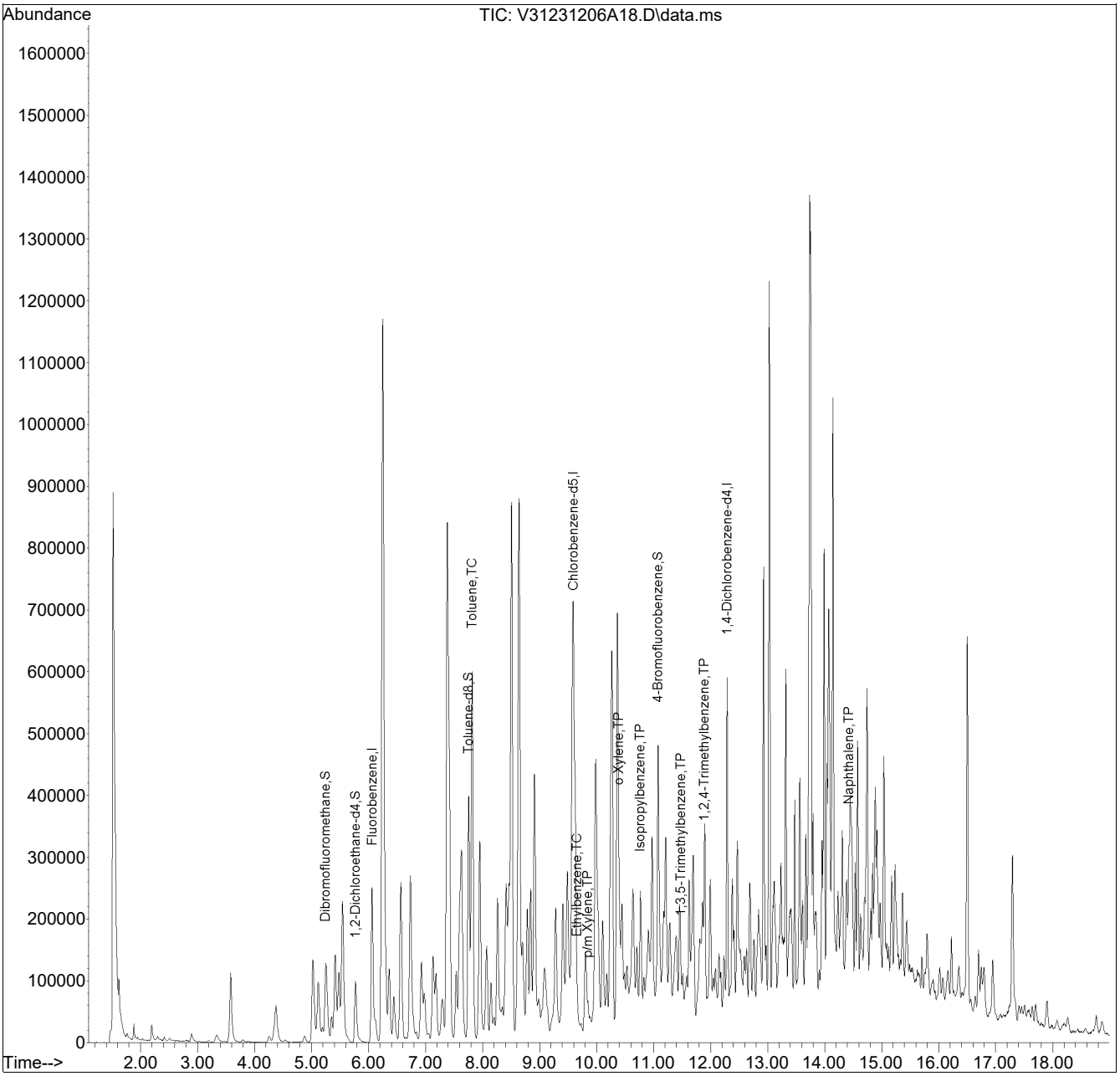


Quantitation Report (QT Reviewed)

Data Path : K:\VOA131\2023\231206A\
Data File : V31231206A18.D
Acq On : 06 Dec 2023 03:18 pm
Operator : VOA131:LAC
Sample : l2371111-03,31,4.84,5,,c
Misc : WG1860978,ICAL20586
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Dec 06 15:24:43 2023
Quant Method : K:\VOA131\2023\231206A\V31_231122D_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 10:16:56 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206A01.D•

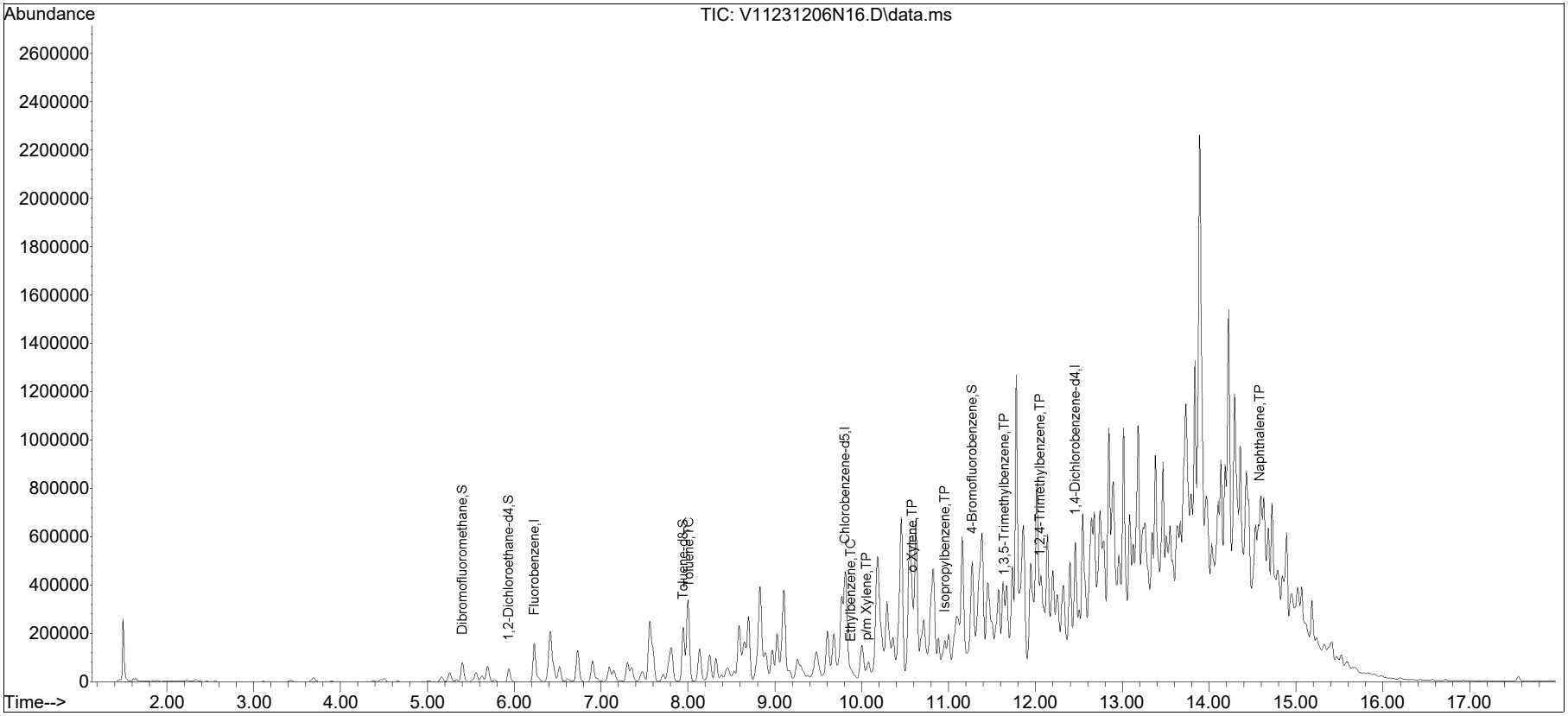


Quantitation Report (QT Reviewed)

Data Path : K:\VOA111\2023\231206N\
Data File : V11231206N16.D
Acq On : 06 Dec 2023 08:01 pm
Operator : VOA111:JIC
Sample : L2371111-05,31,5.44,5,,B
Misc : WG1860967,ICAL20576
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 07 08:12:15 2023
Quant Method : K:\VOA111\2023\231206N\V111_231121Q_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed Nov 22 07:05:49 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list206N03.D•



V111_231121Q_8260.m Thu Dec 07 10:28:08 2023 Page: 2

ANALYTICAL REPORT

Lab Number:	L2371365
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.005
Report Date:	12/20/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2371365-01	GPR281-14-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 09:20	12/05/23
L2371365-02	GPR281-14-4.5-5.0	SOIL	PHILADELPHIA, PA	12/04/23 09:30	12/05/23
L2371365-03	GPR1038-07-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 09:50	12/05/23
L2371365-04	GPR1038-07-1.5-2.0	SOIL	PHILADELPHIA, PA	12/04/23 10:00	12/05/23
L2371365-05	GPR1038-07-4.5-5.0	SOIL	PHILADELPHIA, PA	12/04/23 10:10	12/05/23
L2371365-06	GPR1038-06-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 10:35	12/05/23
L2371365-07	GPR1038-06-2.5-3.0	SOIL	PHILADELPHIA, PA	12/04/23 10:45	12/05/23
L2371365-08	GPR1038-06-4.5-5.0	SOIL	PHILADELPHIA, PA	12/04/23 10:55	12/05/23
L2371365-09	TG06-MW05-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 11:30	12/05/23
L2371365-10	TG06-MW05-2.0-2.5	SOIL	PHILADELPHIA, PA	12/04/23 11:45	12/05/23
L2371365-11	GPR973-10-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 13:25	12/05/23
L2371365-12	GPR973-10-3.5-4.0	SOIL	PHILADELPHIA, PA	12/04/23 13:30	12/05/23
L2371365-13	GPR973-11-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 13:45	12/05/23
L2371365-14	GPR973-11-3.0-3.5	SOIL	PHILADELPHIA, PA	12/04/23 13:50	12/05/23
L2371365-15	GPR973-09-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 13:55	12/05/23
L2371365-16	GPR973-09-3.0-3.5	SOIL	PHILADELPHIA, PA	12/04/23 14:00	12/05/23
L2371365-17	GPR973-08-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 14:10	12/05/23
L2371365-18	GPR973-08-4.0-4.5	SOIL	PHILADELPHIA, PA	12/04/23 14:15	12/05/23
L2371365-19	GPR1101-06-0.5-1.0	SOIL	PHILADELPHIA, PA	12/04/23 15:40	12/05/23
L2371365-20	GPR1101-06-3.5-4.0	SOIL	PHILADELPHIA, PA	12/04/23 15:50	12/05/23
L2371365-21	FB-231204	WATER	PHILADELPHIA, PA	12/04/23 16:05	12/05/23
L2371365-22	TB-231204	WATER	PHILADELPHIA, PA	12/04/23 00:00	12/05/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative (continued)

Report Submission

December 20, 2023: This final report includes the results of the following analyses:

L2371365-19: Volatile Organics, Semivolatile Organics, and Total Metals

December 12, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2371365-04: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (136%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371365-04: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2371365-07: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (215%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371365-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (177%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371365-20: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (195%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371365-20: The surrogate recoveries are outside the method acceptance criteria for 1,2-dichloroethane-d4 (58%) and dibromofluoromethane (59%) due to interference with the Internal Standard.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative (continued)

Microextractables

L2371365-21: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

Semivolatile Organics

L2371365-09D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Semivolatile Organics by SIM

The WG1861610-1 Method Blank, associated with L2371365-21, has a concentration above the reporting limit for Benzo(a)anthracene and Benzo(b)fluoranthene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals

The WG1860471-3 MS recovery for lead (34%), performed on L2371365-02, does not apply because the sample concentration is greater than four times the spike amount added.

The WG1860471-4 Laboratory Duplicate RPD for lead (31%), performed on L2371365-02, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG1864084-4 Laboratory Duplicate RPD for lead (62%), performed on L2371365-19, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 12/20/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-02
Client ID: GPR281-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 09:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 22:51
Analyst: MKS
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00044	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00097	1
o-Xylene	0.00060	J	mg/kg	0.0017	0.00050	1
Xylenes, Total	0.00060	J	mg/kg	0.0017	0.00050	1
Isopropylbenzene	0.00019	J	mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.00049	J	mg/kg	0.0035	0.00033	1
1,2,4-Trimethylbenzene	0.00095	J	mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	101		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-03
Client ID: GPR1038-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 09:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/10/23 21:07
Analyst: AJK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00054	1
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00056	1
o-Xylene	ND		mg/kg	0.0010	0.00029	1
Xylenes, Total	ND		mg/kg	0.0010	0.00029	1
Isopropylbenzene	ND		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-04
Client ID: GPR1038-07-1.5-2.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 00:39
Analyst: AJK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	0.028		mg/kg	0.028	0.0092	1
1,2-Dichloroethane	ND		mg/kg	0.055	0.014	1
Toluene	ND		mg/kg	0.055	0.030	1
1,2-Dibromoethane	ND		mg/kg	0.028	0.016	1
Ethylbenzene	0.012	J	mg/kg	0.055	0.0078	1
p/m-Xylene	0.035	J	mg/kg	0.11	0.031	1
o-Xylene	ND		mg/kg	0.055	0.016	1
Xylenes, Total	0.035	J	mg/kg	0.055	0.016	1
Isopropylbenzene	0.15		mg/kg	0.055	0.0060	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	0.038	J	mg/kg	0.11	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-05
Client ID: GPR1038-07-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:10
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 23:11
Analyst: MKS
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	ND		mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00033	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	ND		mg/kg	0.0023	0.00063	1
o-Xylene	0.0011		mg/kg	0.0011	0.00033	1
Xylenes, Total	0.0011		mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.00057	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00029	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.00067	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-06
Client ID: GPR1038-06-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:35
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/10/23 22:07
Analyst: AJK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00049	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00098	0.00025	1
Toluene	ND		mg/kg	0.00098	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00049	0.00029	1
Ethylbenzene	ND		mg/kg	0.00098	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00055	1
o-Xylene	ND		mg/kg	0.00098	0.00029	1
Xylenes, Total	ND		mg/kg	0.00098	0.00029	1
Isopropylbenzene	ND		mg/kg	0.00098	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-07
Client ID: GPR1038-06-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 02:59
Analyst: MKS
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.00055	J	mg/kg	0.00061	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0020		mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00061	0.00036	1
Ethylbenzene	0.0011	J	mg/kg	0.0012	0.00017	1
p/m-Xylene	0.012		mg/kg	0.0024	0.00068	1
o-Xylene	0.0076		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.020		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0085		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0024	0.00024	1
1,2,4-Trimethylbenzene	0.0046		mg/kg	0.0024	0.00041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	**215**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-08
Client ID: GPR1038-06-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:55
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/10/23 22:38
Analyst: AJK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00023	1
Benzene	0.00033	J	mg/kg	0.00057	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	ND		mg/kg	0.0011	0.00062	1
1,2-Dibromoethane	ND		mg/kg	0.00057	0.00034	1
Ethylbenzene	ND		mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0021	J	mg/kg	0.0023	0.00064	1
o-Xylene	0.0016		mg/kg	0.0011	0.00033	1
Xylenes, Total	0.0037	J	mg/kg	0.0011	0.00033	1
Isopropylbenzene	0.00026	J	mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	0.00098	J	mg/kg	0.0023	0.00022	1
1,2,4-Trimethylbenzene	0.0018	J	mg/kg	0.0023	0.00038	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-09
Client ID: TG06-MW05-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 01:10
Analyst: AJK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.15	0.015	1
Benzene	0.035	J	mg/kg	0.037	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.074	0.019	1
Toluene	0.26		mg/kg	0.074	0.040	1
1,2-Dibromoethane	ND		mg/kg	0.037	0.022	1
Ethylbenzene	0.46		mg/kg	0.074	0.010	1
p/m-Xylene	9.8		mg/kg	0.15	0.041	1
o-Xylene	3.2		mg/kg	0.074	0.021	1
Xylenes, Total	13.		mg/kg	0.074	0.021	1
Isopropylbenzene	0.93		mg/kg	0.074	0.0080	1
1,3,5-Trimethylbenzene	17.		mg/kg	0.15	0.014	1
1,2,4-Trimethylbenzene	33.	E	mg/kg	0.15	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-09 D
Client ID: TG06-MW05-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 04:01
Analyst: MKS
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,4-Trimethylbenzene	30.		mg/kg	2.9	0.49	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-10
Client ID: TG06-MW05-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 03:20
Analyst: MKS
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	0.0014		mg/kg	0.00062	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	0.0031		mg/kg	0.0012	0.00067	1
1,2-Dibromoethane	ND		mg/kg	0.00062	0.00036	1
Ethylbenzene	0.0050		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.027		mg/kg	0.0025	0.00069	1
o-Xylene	0.055		mg/kg	0.0012	0.00036	1
Xylenes, Total	0.082		mg/kg	0.0012	0.00036	1
Isopropylbenzene	0.074		mg/kg	0.0012	0.00014	1
1,3,5-Trimethylbenzene	0.035		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	0.078		mg/kg	0.0025	0.00041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	127		70-130
4-Bromofluorobenzene	**177**	Q	70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-19
Client ID: GPR1101-06-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/16/23 14:40
Analyst: JIC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	ND		mg/kg	0.00095	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00095	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00053	1
o-Xylene	ND		mg/kg	0.00095	0.00028	1
Xylenes, Total	ND		mg/kg	0.00095	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-20
Client ID: GPR1101-06-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 02:38
Analyst: MKS
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.00072	J	mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	0.00055	J	mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0051		mg/kg	0.0024	0.00066	1
o-Xylene	0.0041		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.0092		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.012		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0017	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0054		mg/kg	0.0024	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**58**	Q	70-130
Toluene-d8	124		70-130
4-Bromofluorobenzene	**195**	Q	70-130
Dibromofluoromethane	**59**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-21
Client ID: FB-231204
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 16:05
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/08/23 14:14
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/08/23 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-21
Client ID: FB-231204
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 16:05
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/23 22:18
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-22
Client ID: TB-231204
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 00:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/23 22:44
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/08/23 13:32
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/08/23 09:28

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 21 Batch: WG1861398-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371365

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/23 21:53
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 21-22 Batch: WG1862398-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/10/23 18:47
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,06,08 Batch: WG1862827-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/10/23 18:47
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,09 Batch: WG1862829-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371365

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/11/23 19:59
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,05,07,10,20 Batch: WG1862836-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/11/23 19:59
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09 Batch: WG1862839-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/16/23 13:24
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 19 Batch: WG1865194-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 21		Batch: WG1861398-2						
1,2-Dibromoethane	98		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 21-22 Batch: WG1862398-3 WG1862398-4								
Methyl tert butyl ether	100		110		63-130	10		20
Benzene	110		100		70-130	10		20
1,2-Dichloroethane	99		99		70-130	0		20
Toluene	100		100		70-130	0		20
1,2-Dibromoethane	95		100		70-130	5		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		103		70-130
Toluene-d8	107		109		70-130
4-Bromofluorobenzene	118		116		70-130
Dibromofluoromethane	97		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,06,08 Batch: WG1862827-3 WG1862827-4								
Methyl tert butyl ether	94		103		66-130	9		30
Benzene	85		88		70-130	3		30
1,2-Dichloroethane	92		90		70-130	2		30
Toluene	84		84		70-130	0		30
1,2-Dibromoethane	83		81		70-130	2		30
Ethylbenzene	87		87		70-130	0		30
p/m-Xylene	87		87		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	83		84		70-130	1		30
1,3,5-Trimethylbenzene	83		83		70-130	0		30
1,2,4-Trimethylbenzene	83		83		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	94		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,09 Batch: WG1862829-3 WG1862829-4								
Methyl tert butyl ether	94		103		66-130	9		30
Benzene	85		88		70-130	3		30
1,2-Dichloroethane	92		90		70-130	2		30
Toluene	84		84		70-130	0		30
1,2-Dibromoethane	83		81		70-130	2		30
Ethylbenzene	87		87		70-130	0		30
p/m-Xylene	87		87		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	83		84		70-130	1		30
1,3,5-Trimethylbenzene	83		83		70-130	0		30
1,2,4-Trimethylbenzene	83		83		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	94		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,05,07,10,20 Batch: WG1862836-3 WG1862836-4								
Methyl tert butyl ether	**140**	Q	**140**	Q	66-130	0		30
Benzene	99		99		70-130	0		30
1,2-Dichloroethane	99		100		70-130	1		30
Toluene	98		97		70-130	1		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	106		102		70-130	4		30
o-Xylene	110		106		70-130	4		30
Isopropylbenzene	98		97		70-130	1		30
1,3,5-Trimethylbenzene	101		98		70-130	3		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		91		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG1862839-3 WG1862839-4								
Methyl tert butyl ether	**140**	Q	**140**	Q	66-130	0		30
Benzene	99		99		70-130	0		30
1,2-Dichloroethane	99		100		70-130	1		30
Toluene	98		97		70-130	1		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	106		102		70-130	4		30
o-Xylene	110		106		70-130	4		30
Isopropylbenzene	98		97		70-130	1		30
1,3,5-Trimethylbenzene	101		98		70-130	3		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		91		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	96		97		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 19 Batch: WG1865194-3 WG1865194-4								
Methyl tert butyl ether	102		98		66-130	4		30
Benzene	106		104		70-130	2		30
1,2-Dichloroethane	97		96		70-130	1		30
Toluene	105		103		70-130	2		30
1,2-Dibromoethane	96		95		70-130	1		30
Ethylbenzene	106		106		70-130	0		30
p/m-Xylene	108		107		70-130	1		30
o-Xylene	102		102		70-130	0		30
Isopropylbenzene	109		109		70-130	0		30
1,3,5-Trimethylbenzene	102		104		70-130	2		30
1,2,4-Trimethylbenzene	103		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	95		100		70-130
Dibromofluoromethane	110		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-02
Client ID: GPR281-14-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 09:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 16:06
Analyst: IM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.8		mg/kg	0.052	0.032	1
Fluorene	0.22	J	mg/kg	0.26	0.025	1
Phenanthrene	0.85		mg/kg	0.16	0.032	1
Anthracene	0.33		mg/kg	0.16	0.051	1
Pyrene	0.78		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.62		mg/kg	0.16	0.029	1
Chrysene	0.62		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	0.83		mg/kg	0.16	0.044	1
Benzo(a)pyrene	0.80		mg/kg	0.21	0.063	1
Benzo(ghi)perylene	0.48		mg/kg	0.21	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-03
Client ID: GPR1038-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 09:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 16:23
Analyst: IM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.11		mg/kg	0.036	0.022	1
Fluorene	0.84		mg/kg	0.18	0.017	1
Phenanthrene	8.9	E	mg/kg	0.11	0.022	1
Anthracene	2.8		mg/kg	0.11	0.035	1
Pyrene	9.4	E	mg/kg	0.11	0.018	1
Benzo(a)anthracene	4.5		mg/kg	0.11	0.020	1
Chrysene	3.7		mg/kg	0.11	0.018	1
Benzo(b)fluoranthene	3.7		mg/kg	0.11	0.030	1
Benzo(a)pyrene	3.0		mg/kg	0.14	0.043	1
Benzo(ghi)perylene	1.2		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	46		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-03 D
Client ID: GPR1038-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 09:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/12/23 08:18
Analyst: IM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	9.4		mg/kg	0.53	0.11	5
Pyrene	10.		mg/kg	0.53	0.088	5

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-04
Client ID: GPR1038-07-1.5-2.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 16:39
Analyst: IM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.36		mg/kg	0.037	0.022	1
Fluorene	0.44		mg/kg	0.18	0.018	1
Phenanthrene	0.79		mg/kg	0.11	0.022	1
Anthracene	0.41		mg/kg	0.11	0.036	1
Pyrene	1.9		mg/kg	0.11	0.018	1
Benzo(a)anthracene	1.2		mg/kg	0.11	0.021	1
Chrysene	1.0		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	1.5		mg/kg	0.11	0.031	1
Benzo(a)pyrene	1.2		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	0.68		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-05
Client ID: GPR1038-07-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:10
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 18:00
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.4		mg/kg	0.043	0.026	1
Fluorene	1.0		mg/kg	0.22	0.021	1
Phenanthrene	3.0		mg/kg	0.13	0.026	1
Anthracene	1.4		mg/kg	0.13	0.042	1
Pyrene	2.8		mg/kg	0.13	0.021	1
Benzo(a)anthracene	1.9		mg/kg	0.13	0.024	1
Chrysene	2.1		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	1.8		mg/kg	0.13	0.036	1
Benzo(a)pyrene	1.4		mg/kg	0.17	0.053	1
Benzo(ghi)perylene	0.96		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	42		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-06
Client ID: GPR1038-06-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:35
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 17:37
Analyst: CMM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.46		mg/kg	0.035	0.022	1
Fluorene	0.35		mg/kg	0.18	0.017	1
Phenanthrene	2.0		mg/kg	0.11	0.022	1
Anthracene	0.36		mg/kg	0.11	0.034	1
Pyrene	2.2		mg/kg	0.11	0.018	1
Benzo(a)anthracene	1.6		mg/kg	0.11	0.020	1
Chrysene	2.3		mg/kg	0.11	0.018	1
Benzo(b)fluoranthene	1.1		mg/kg	0.11	0.030	1
Benzo(a)pyrene	1.2		mg/kg	0.14	0.043	1
Benzo(ghi)perylene	0.78		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-07
Client ID: GPR1038-06-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 17:13
Analyst: CMM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.1		mg/kg	0.040	0.024	1
Fluorene	1.1		mg/kg	0.20	0.020	1
Phenanthrene	4.4		mg/kg	0.12	0.024	1
Anthracene	1.1		mg/kg	0.12	0.039	1
Pyrene	3.2		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.1		mg/kg	0.12	0.023	1
Chrysene	3.1		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	1.3		mg/kg	0.12	0.034	1
Benzo(a)pyrene	1.4		mg/kg	0.16	0.049	1
Benzo(ghi)perylene	0.97		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	56		30-120
4-Terphenyl-d14	45		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-08
Client ID: GPR1038-06-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:55
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 19:11
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.8		mg/kg	0.039	0.024	1
Fluorene	0.78		mg/kg	0.19	0.019	1
Phenanthrene	3.4		mg/kg	0.12	0.024	1
Anthracene	1.2		mg/kg	0.12	0.038	1
Pyrene	2.7		mg/kg	0.12	0.019	1
Benzo(a)anthracene	1.5		mg/kg	0.12	0.022	1
Chrysene	2.1		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	1.9		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.5		mg/kg	0.16	0.047	1
Benzo(ghi)perylene	1.0		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	44		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	47		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-09 D
Client ID: TG06-MW05-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 21:31
Analyst: CMM
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	30.		mg/kg	0.42	0.25	10
Fluorene	3.0		mg/kg	2.1	0.20	10
Phenanthrene	8.8		mg/kg	1.2	0.25	10
Anthracene	2.0		mg/kg	1.2	0.40	10
Pyrene	2.1		mg/kg	1.2	0.21	10
Benzo(a)anthracene	0.96	J	mg/kg	1.2	0.23	10
Chrysene	1.1	J	mg/kg	1.2	0.22	10
Benzo(b)fluoranthene	1.0	J	mg/kg	1.2	0.35	10
Benzo(a)pyrene	0.81	J	mg/kg	1.7	0.51	10
Benzo(ghi)perylene	0.50	J	mg/kg	1.7	0.24	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	78		30-120
4-Terphenyl-d14	43		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-10
Client ID: TG06-MW05-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 18:24
Analyst: CMM
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.0		mg/kg	0.044	0.027	1
Fluorene	0.49		mg/kg	0.22	0.021	1
Phenanthrene	1.4		mg/kg	0.13	0.026	1
Anthracene	0.56		mg/kg	0.13	0.043	1
Pyrene	1.5		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.85		mg/kg	0.13	0.025	1
Chrysene	1.2		mg/kg	0.13	0.023	1
Benzo(b)fluoranthene	1.0		mg/kg	0.13	0.037	1
Benzo(a)pyrene	0.90		mg/kg	0.17	0.053	1
Benzo(ghi)perylene	0.79		mg/kg	0.17	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	43		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-19
Client ID: GPR1101-06-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/23 17:51
Analyst: ALS
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 12/14/23 15:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.67		mg/kg	0.038	0.023	1
Fluorene	0.19		mg/kg	0.19	0.018	1
Phenanthrene	0.50		mg/kg	0.11	0.023	1
Anthracene	0.20		mg/kg	0.11	0.037	1
Pyrene	0.42		mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.27		mg/kg	0.11	0.022	1
Chrysene	0.29		mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.41		mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.35		mg/kg	0.15	0.046	1
Indeno(1,2,3-cd)pyrene	0.22		mg/kg	0.15	0.027	1
Benzo(ghi)perylene	0.28		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	51		30-120
4-Terphenyl-d14	41		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-20
Client ID: GPR1101-06-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 19:34
Analyst: CMM
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.7		mg/kg	0.042	0.026	1
Fluorene	0.43		mg/kg	0.21	0.020	1
Phenanthrene	1.7		mg/kg	0.13	0.026	1
Anthracene	0.80		mg/kg	0.13	0.041	1
Pyrene	1.9		mg/kg	0.13	0.021	1
Benzo(a)anthracene	1.3		mg/kg	0.13	0.024	1
Chrysene	1.5		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	1.6		mg/kg	0.13	0.035	1
Benzo(a)pyrene	1.4		mg/kg	0.17	0.051	1
Indeno(1,2,3-cd)pyrene	0.97		mg/kg	0.17	0.029	1
Benzo(ghi)perylene	0.91		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	44		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-21
Client ID: FB-231204
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 16:05
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 16:12
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 17:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	60		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/07/23 10:36
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 12/06/23 12:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-10,20 Batch: WG1860508-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.018
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	78		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 14:38
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 14:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 21 Batch: WG1861610-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	0.01	J	ug/l	0.10	0.01
Phenanthrene	0.02	J	ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.06	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.09		ug/l	0.05	0.02
Chrysene	0.06	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.09		ug/l	0.05	0.01
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	0.06	J	ug/l	0.10	0.01
Benzo(ghi)perylene	0.06	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	76		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/15/23 02:35
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/14/23 15:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 19 Batch: WG1864093-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	62		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-10,20 Batch: WG1860508-2 WG1860508-3								
Naphthalene	51		60		40-140	16		50
Fluorene	52		61		40-140	16		50
Phenanthrene	52		62		40-140	18		50
Anthracene	55		65		40-140	17		50
Pyrene	54		64		35-142	17		50
Benzo(a)anthracene	54		64		40-140	17		50
Chrysene	54		62		40-140	14		50
Benzo(b)fluoranthene	53		60		40-140	12		50
Benzo(a)pyrene	58		69		40-140	17		50
Indeno(1,2,3-cd)pyrene	48		57		40-140	17		50
Benzo(ghi)perylene	47		55		40-140	16		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55		66		25-120
Phenol-d6	58		70		10-120
Nitrobenzene-d5	56		67		23-120
2-Fluorobiphenyl	51		60		30-120
2,4,6-Tribromophenol	64		76		10-136
4-Terphenyl-d14	51		61		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 21 Batch: WG1861610-2 WG1861610-3								
Naphthalene	66		60		40-140	10		40
Fluorene	70		66		40-140	6		40
Phenanthrene	73		68		40-140	7		40
Anthracene	79		74		40-140	7		40
Pyrene	78		74		26-127	5		40
Benzo(a)anthracene	80		76		40-140	5		40
Chrysene	74		69		40-140	7		40
Benzo(b)fluoranthene	88		78		40-140	12		40
Benzo(a)pyrene	81		76		40-140	6		40
Indeno(1,2,3-cd)pyrene	93		89		40-140	4		40
Benzo(ghi)perylene	80		76		40-140	5		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		76		23-120
2-Fluorobiphenyl	68		63		15-120
4-Terphenyl-d14	73		70		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 19 Batch: WG1864093-2 WG1864093-3								
Naphthalene	63		57		40-140	10		50
Fluorene	66		59		40-140	11		50
Phenanthrene	68		60		40-140	13		50
Anthracene	71		62		40-140	14		50
Pyrene	69		60		35-142	14		50
Benzo(a)anthracene	70		61		40-140	14		50
Chrysene	70		62		40-140	12		50
Benzo(b)fluoranthene	68		57		40-140	18		50
Benzo(a)pyrene	75		66		40-140	13		50
Indeno(1,2,3-cd)pyrene	63		56		40-140	12		50
Benzo(ghi)perylene	62		54		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	66		61		23-120
2-Fluorobiphenyl	66		59		30-120
4-Terphenyl-d14	69		61		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-02
Client ID: GPR281-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 09:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	340		mg/kg	3.04	0.163	1	12/07/23 07:10	12/07/23 20:00	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-03
Client ID: GPR1038-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 09:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	133		mg/kg	2.12	0.113	1	12/07/23 07:10	12/07/23 19:50	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-04
Client ID: GPR1038-07-1.5-2.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 10:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	232		mg/kg	2.14	0.115	1	12/07/23 07:10	12/07/23 19:54	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-05
Client ID: GPR1038-07-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:10
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	609		mg/kg	2.48	0.133	1	12/07/23 07:10	12/07/23 19:57	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-06
Client ID: GPR1038-06-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 10:35
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	83.1		mg/kg	2.08	0.111	1	12/07/23 07:10	12/07/23 20:56	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-07
Client ID: GPR1038-06-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 10:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	803		mg/kg	2.34	0.126	1	12/07/23 07:10	12/07/23 20:59	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-08
Client ID: GPR1038-06-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 10:55
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	431		mg/kg	2.31	0.124	1	12/07/23 07:10	12/07/23 21:02	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-09
Client ID: TG06-MW05-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 11:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	506		mg/kg	2.48	0.133	1	12/07/23 07:10	12/07/23 21:06	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-10
Client ID: TG06-MW05-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 11:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	441		mg/kg	2.56	0.137	1	12/07/23 07:10	12/07/23 21:09	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-19
Client ID: GPR1101-06-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	86.4		mg/kg	2.22	0.119	1	12/19/23 06:40	12/19/23 19:39	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371365
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-20
Client ID: GPR1101-06-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 15:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	692		mg/kg	2.51	0.134	1	12/07/23 07:10	12/07/23 21:12	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-21
Client ID: FB-231204
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 16:05
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/11/23 11:50	12/11/23 16:13	EPA 3005A	1,6020B	NTB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-10,20 Batch: WG1860471-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/07/23 07:10	12/07/23 19:43	1,6010D	AMW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21 Batch: WG1860657-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/11/23 11:50	12/11/23 15:13	1,6020B	NTB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 19 Batch: WG1864084-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/19/23 06:40	12/19/23 19:23	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-10,20 Batch: WG1860471-2 SRM Lot Number: D122-540								
Lead, Total	106		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 21 Batch: WG1860657-2								
Lead, Total	105		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 19 Batch: WG1864084-2 SRM Lot Number: D122-540								
Lead, Total	104		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-10,20 QC Batch ID: WG1860471-3 QC Sample: L2371365-02 Client ID: GPR281-14-4.5-5.0												
Lead, Total	340	64.7	362	**34**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG1860657-3 QC Sample: L2371776-01 Client ID: MS Sample												
Lead, Total	ND	530	590.5	111		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 19 QC Batch ID: WG1864084-3 QC Sample: L2371365-19 Client ID: GPR1101-06-0.5-1.0												
Lead, Total	86.4	48.6	138	106		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-10,20 QC Batch ID: WG1860471-4 QC Sample: L2371365-02 Client ID: GPR281-14-4.5-5.0						
Lead, Total	340	249	mg/kg	**31**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 19 QC Batch ID: WG1864084-4 QC Sample: L2371365-19 Client ID: GPR1101-06-0.5-1.0						
Lead, Total	86.4	164	mg/kg	**62**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-02
Client ID: GPR281-14-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/04/23 09:30
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.8		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-03
Client ID: GPR1038-07-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 09:50
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.28		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-04
Client ID: GPR1038-07-1.5-2.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/04/23 10:00
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.7		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.15		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-05
Client ID: GPR1038-07-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 10:10
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.9		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	7.64		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-06
Client ID: GPR1038-06-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/04/23 10:35
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.0		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	9.92		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-07
Client ID: GPR1038-06-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 10:45
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.2		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.63		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-08
Client ID: GPR1038-06-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 10:55
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.8		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	9.35		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-09
Client ID: TG06-MW05-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 11:30
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.24		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-10
Client ID: TG06-MW05-2.0-2.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 11:45
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.6		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.01		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-12
Client ID: GPR973-10-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 13:30
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	11.5		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-14
Client ID: GPR973-11-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 13:50
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.8		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	12.1		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-16
Client ID: GPR973-09-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/04/23 14:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.7		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.66		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-18
Client ID: GPR973-08-4.0-4.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/04/23 14:15
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.9		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM
pH (H)	8.51		SU	-	NA	1	-	12/08/23 18:38	1,9045D	AAS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-19
Client ID: GPR1101-06-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 15:40
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	12/14/23 10:08	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-20
Client ID: GPR1101-06-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/04/23 15:50
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.8		%	0.100	NA	1	-	12/06/23 21:02	121,2540G	WJM

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371365-21
Client ID: FB-231204
Sample Location: PHILADELPHIA, PA

Date Collected: 12/04/23 16:05
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.84		SU	-	NA	1	-	12/07/23 19:16	1,9040C	AAS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 21 Batch: WG1861179-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 03-10,12,14,16,18 Batch: WG1861684-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371365

Report Date: 12/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-10,12,14,16,18,20 QC Batch ID: WG1860707-1 QC Sample: L2371365-02 Client ID: GPR281-14-4.5-5.0						
Solids, Total	63.8	67.2	%	5		20
General Chemistry - Westborough Lab Associated sample(s): 21 QC Batch ID: WG1861179-2 QC Sample: L2371876-01 Client ID: DUP Sample						
pH	4.28	4.32	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 03-10,12,14,16,18 QC Batch ID: WG1861684-2 QC Sample: L2371365-03 Client ID: GPR1038-07-0.5-1.0						
pH (H)	8.28	8.47	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 19 QC Batch ID: WG1863857-1 QC Sample: L2371591-01 Client ID: DUP Sample						
Solids, Total	82.4	77.6	%	6		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371365-01A	Vial MeOH preserved	A	NA		2.4	Y	Absent		HOLD-8260HLW(14)
L2371365-01B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	HOLD-8260HLW(14)
L2371365-01C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	HOLD-8260HLW(14)
L2371365-01D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		HOLD-WETCHEM()
L2371365-01E	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		HOLD-METAL(180)
L2371365-01F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		HOLD-8270(14)
L2371365-02A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-02B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-02C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-02D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-02F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2371365-03A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-03B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-03C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-03D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-03F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-04A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-04B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-04C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-04D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371365-04F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-05A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-05B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-05C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-05D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-05F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-06A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-06B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-06C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-06D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-06F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-07A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-07B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-07C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-07D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-07F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-08A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-08B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-08C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-08D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-08F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-09A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-09B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-09C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371365-09D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-09F	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-09G	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-10A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-10B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-10C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-10D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-10F	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-10G	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PH-9045(1),PA-PAH(14)
L2371365-11A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		HOLD-WETCHEM()
L2371365-12A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		TS(7),PH-9045(1)
L2371365-13A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		HOLD-WETCHEM()
L2371365-14A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		TS(7),PH-9045(1)
L2371365-15A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		HOLD-WETCHEM()
L2371365-16A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		TS(7),PH-9045(1)
L2371365-17A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		HOLD-WETCHEM()
L2371365-18A	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		TS(7),PH-9045(1)
L2371365-19A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-19B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-19C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-19D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-19E	Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-19F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2371365-20A	Vial MeOH preserved	A	NA		2.4	Y	Absent		PA-8260HLW(14)
L2371365-20B	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)
L2371365-20C	Vial water preserved	A	NA		2.4	Y	Absent	06-DEC-23 04:19	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371365
Report Date: 12/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371365-20D	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		TS(7)
L2371365-20E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.4	Y	Absent		PB-TI(180)
L2371365-20F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		PA-PAH(14)
L2371365-21A	Vial HCl preserved	A	NA		2.4	Y	Absent		PA-8260(14)
L2371365-21B	Vial HCl preserved	A	NA		2.4	Y	Absent		PA-8260(14)
L2371365-21C	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		8011(14)
L2371365-21D	Plastic 250ml unpreserved	A	7	7	2.4	Y	Absent		PH-9040(1),PA-PAHSIM-LVI(7)
L2371365-21E	Plastic 250ml unpreserved	A	7	7	2.4	Y	Absent		PH-9040(1),PA-PAHSIM-LVI(7)
L2371365-21F	Plastic 250ml HNO3 preserved	A	<2	<2	2.4	Y	Absent		PB-6020T-PPB(180)
L2371365-22A	Vial HCl preserved	A	NA		2.4	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371365
Project Number:	200.00135.005	**Report Date:**	12/20/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

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Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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Date Rec'd in Lab: 12/6/23

ALPHA Job #: L2371365

Client Information
Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransom.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135.005
(Use Project name as Project #) ☐
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP short list 1-5 (see attached)	pH	PADEP short list 1-4 (see attached)	Total Bottle	Sample Specific Comments
71365-01	GPR281-14-0.5-1.0	12/04/23	9:20	S	ND	X			6	Hold
-02	GPR281-14-4.5-5.0		9:30			X			6	
-03	GPR1038-07-0.5-1.0		9:50			X	X		6	
-04	GPR1038-07-1.5-2.0		10:00			X	X		6	
-05	GPR1038-07-4.5-5.0		10:10			X	X		6	
-06	GPR1038-06-0.5-1.0		10:35			X	X		6	
-07	GPR1038-06-2.5-3.0		10:45			X	X		6	
-08	GPR1038-06-4.5-5.0		10:55			X	X		6	
-09	TG06-MW05-0.5-1.0		11:30			X	X		7	
-10	TG06-MW05-2.0-2.5	↓	11:45	↓	↓	X	X		7	

Container Type	G	G	G
Preservative	AB	A	AB

Preservative Code:
N = None
HCl = HCl
HNO_3 = HNO_3
H_2SO_4 = H_2SO_4
NaOH = NaOH
MeOH = MeOH
$NaHSO_4$ = $NaHSO_4$
$Na_2S_2O_3$ = $Na_2S_2O_3$
ZnAc/NaOH = E = Zn Ac/NaOH
Other = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Peter Dail	12/5/23 8:00	D. Robinson AAL	12/5/23 800
D. Robinson AAL 12/5/23	1520		12/5 1520
	12-5 1800		12/5/23 18:30
	12/5/23		12/5 21:45
AAL 12/6 0800			12/6/23 0800

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 3

Date Rec'd in Lab: 12/6/23

ALPHA Job #: L2371365

Client Information
Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00335.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP analysis 1-5 (see attached)	pH	PADEP analysis 1-6 (see attached)	Sample Specific Comments	Total Bottle
71365-11	GPR973-10-0.5-1.0	12/04/23	13:25	S	ND		H		Hold	1
-12	GPR973-10-3.5-4.0		13:30				X			1
-13	GPR975-11-0.5-1.0		13:45				H		Hold	1
-14	GPR973-11-3.0-3.5		13:50				X			1
-15	GPR973-09-0.5-1.0		13:55				H		Hold	1
-16	GPR973-09-3.0-3.5		14:00				X			1
-17	GPR973-08-0.5-1.0		14:10				H		Hold	1
-18	GPR973-08-4.0-4.5		14:15				X			1
-19	GPR1101-06-0.5-1.0		15:40					H	Hold	6
-20	GPR1101-06-3.5-4.0		15:50					X		6

Container Type	G	G	G							
Preservative	AB	A	AB							

Preservative Code: ☐ = None, H = HCl, N = HNO_3, S = H_2SO_4, O = NaOH, M = MeOH, B = $NaHSO_4$, T = $Na_2S_2O_3$, Z = Zn Ac/NaOH, X = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Kristy Dyer	12/04/23 8:00	D. Rotunno AAL	12/5/23 8:00
D. Rotunno AAL	12/5/23 15:00	[illegible] AAL	12/5/23 15:00
[illegible] AAL	12/5/23 18:00	[illegible]	12/5/23 18:30
[illegible]	12/5/23	[illegible] AAL	12/5 23:45
[illegible]		[illegible]	12/6/23 0000

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTANTS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 12/6/23

ALPHA Job #: L2371365

Client Information
Client: Ramsem Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt2@comcast.net

Project Information
Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135.005
(Use Project name as Project #) ☐
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☑ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP soil mtx 1-5 (see attached)	pH	PADEP soil mtx 1-9 (see attached)	VOCs	Sample Specific Comments	Total Bottles
71365-21	FB-231204	12/04/23	16:05	blank	ND	X	X	X	X		6
-22	TB-231204	↓	16:05	↓	↓				X		1

Preservative Code:
N = None
H = HCl
N = HNO_3
H = H_2SO_4
S = NaOH
M = MeOH
B = $NaHSO_4$
T = $Na_2S_2O_3$
Z/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type									
Preservative									

Relinquished By:	Date/Time	Received By:	Date/Time
	12/4/23 3:00	D. Robinson AAL	12/5/23 8:00
D. Robinson AAL	12/5/23 13:20		12-5-23 13:20
	12-5-23 18:00		12/5/23 18:30
	12/6/23		12/6 2:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

PADEP Shortlist 1-5

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Naphthalene
Phenanthrene
Pyrene

Lead

PADEP Shortlist 1-6

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Lead

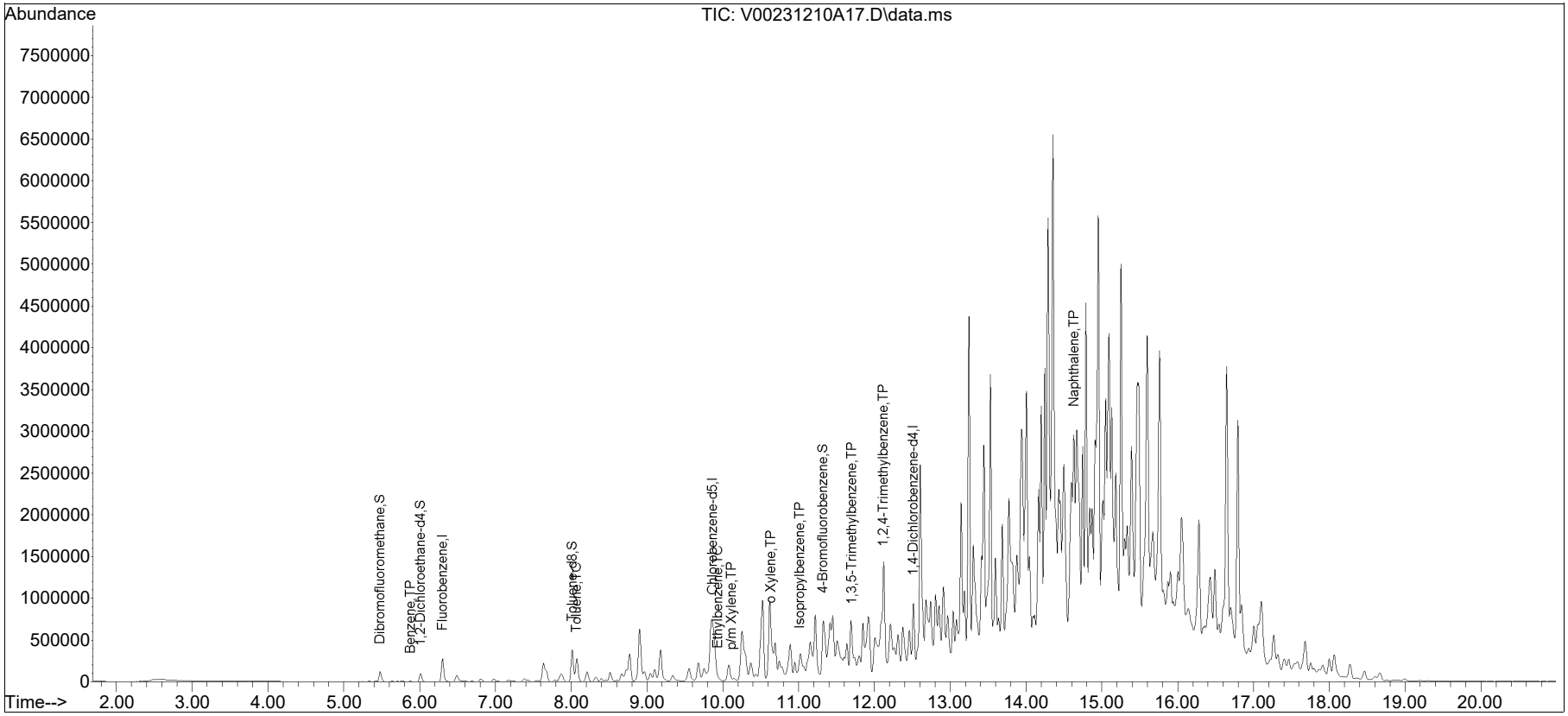
Serial_No:12202311:34

Quantitation Report (QT Reviewed)

Data Path : K:\VOA100\2023\231210A\
Data File : V00231210A17.D
Acq On : 11 Dec 2023 12:39 am
Operator : VOA100:AJK
Sample : L2371365-04,31H,5.77,5,0.100,,A
Misc : WG1862829,ICAL20583
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 11 14:19:14 2023
Quant Method : K:\VOA100\2023\231210A\V100_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 06:44:48 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list210A02.D•

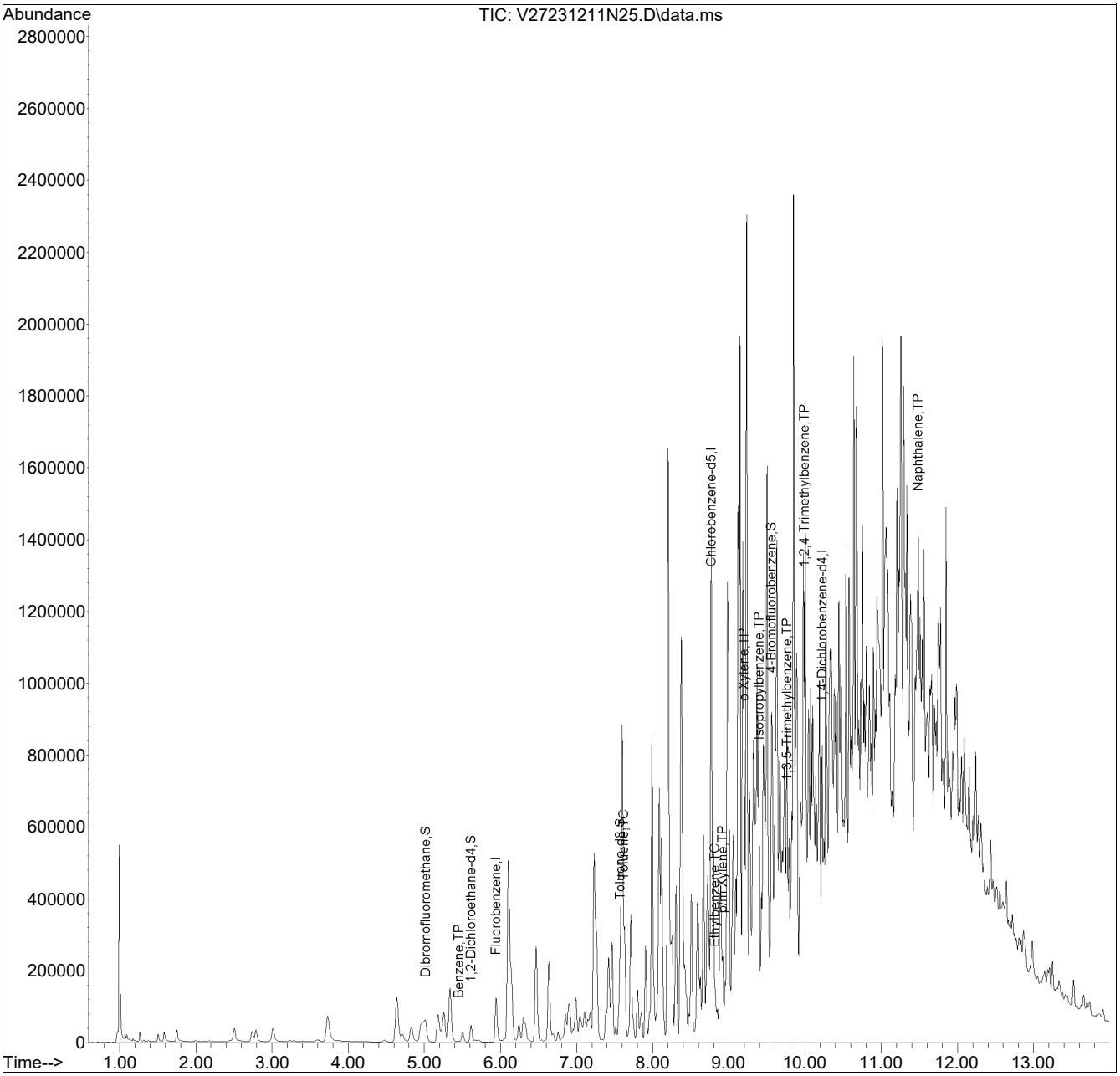


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231211N\
Data File : V27231211N25.D
Acq On : 12 Dec 2023 02:59 am
Operator : VOA127:MKS
Sample : L2371365-07,31,4.99,5,,C
Misc : WG1862836,ICAL20585
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Dec 12 09:29:46 2023
Quant Method : K:\VOA127\2023\231211N\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list211N01.D•

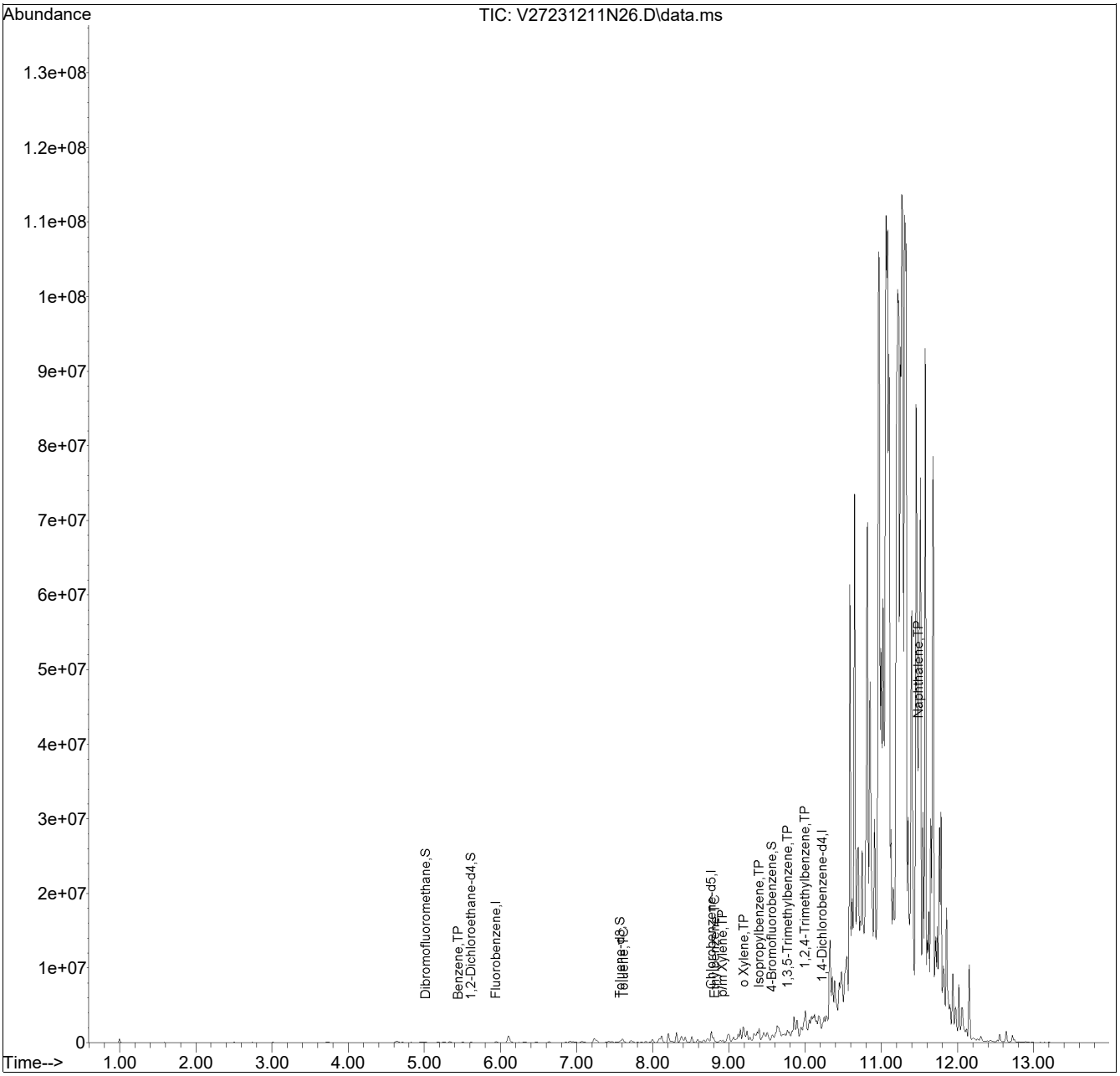


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231211N\
Data File : V27231211N26.D
Acq On : 12 Dec 2023 03:20 am
Operator : VOA127:MKS
Sample : L2371365-10,31,5.41,5,,B
Misc : WG1862836,ICAL20585
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Dec 12 09:30:13 2023
Quant Method : K:\VOA127\2023\231211N\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list211N01.D•

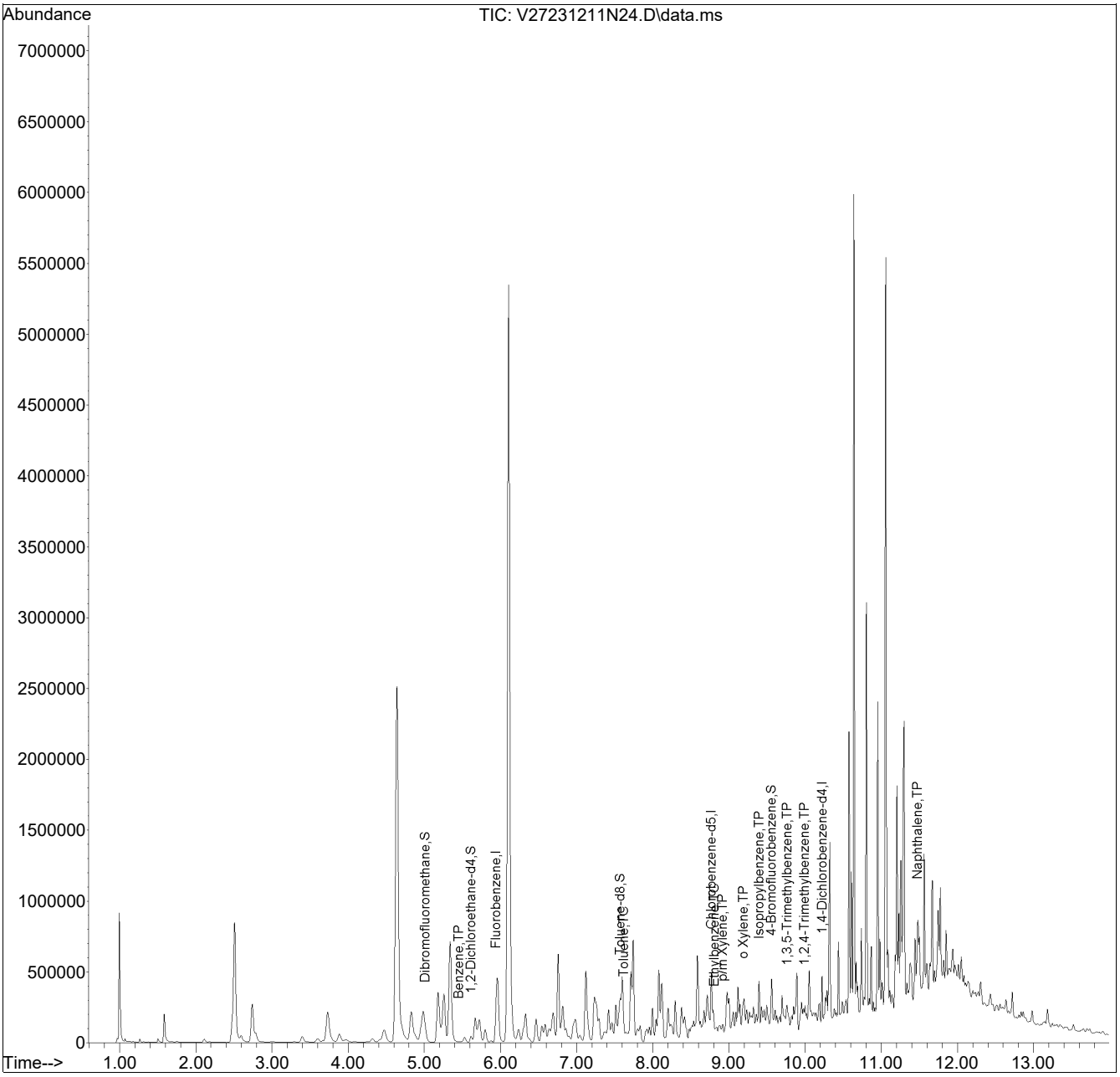


Quantitation Report (QT Reviewed)

Data Path : K:\VOA127\2023\231211N\
Data File : V27231211N24.D
Acq On : 12 Dec 2023 02:38 am
Operator : VOA127:MKS
Sample : L2371365-20,31,5.44,5,,C
Misc : WG1862836,ICAL20585
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 12 09:29:34 2023
Quant Method : K:\VOA127\2023\231211N\V127_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 09:13:04 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list211N01.D•



ANALYTICAL REPORT

Lab Number:	L2371591
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.005
Report Date:	12/20/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2371591-01	GPR1101-07-0.5-1.0	SOIL	PHILADELPHIA, PA	12/05/23 08:45	12/05/23
L2371591-02	GPR1101-07-2.5-3.0	SOIL	PHILADELPHIA, PA	12/05/23 09:00	12/05/23
L2371591-03	GPR1101-08-0.5-1.0	SOIL	PHILADELPHIA, PA	12/05/23 09:15	12/05/23
L2371591-04	GPR1101-08-4.5-5.0	SOIL	PHILADELPHIA, PA	12/05/23 09:25	12/05/23
L2371591-05	GPR270-14-0.5-1.0	SOIL	PHILADELPHIA, PA	12/05/23 10:20	12/05/23
L2371591-06	GPR270-14-2.0-2.5	SOIL	PHILADELPHIA, PA	12/05/23 10:30	12/05/23
L2371591-07	GPR270-14-3.5-4.0	SOIL	PHILADELPHIA, PA	12/05/23 10:40	12/05/23
L2371591-08	FB-231205	WATER	PHILADELPHIA, PA	12/05/23 13:00	12/05/23
L2371591-09	TB-231205	WATER	PHILADELPHIA, PA	12/05/23 00:00	12/05/23

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative (continued)

Report Submission

December 20, 2023: This final report includes the results of the following analyses:

L2371591-01 and -03: Volatile Organics, Semivolatile Organics, and Total Metals

December 12, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2371591-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (272%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2371591-06: The internal standard (IS) response(s) for 1,4-dichlorobenzene-d4 (29%) and the surrogate recovery for toluene-d8 (57%), 4-bromofluorobenzene (4360%), and dibromofluoromethane (132%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2371591-07: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (191%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Microextractables

L2371591-08 and -09: The sample was in improper preservative. The 8011 compound was analyzed from an HCl preserved vial.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

Case Narrative (continued)

Semivolatile Organics

L2371591-02D, -06D, and -07D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Semivolatile Organics by SIM

The WG1861610-1 Method Blank, associated with L2371591-08, has a concentration above the reporting limit for Benzo(a)anthracene and Benzo(b)fluoranthene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 12/20/23

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-01
Client ID: GPR1101-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 08:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/16/23 13:49
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00027	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00087	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00023	1
p/m-Xylene	ND		mg/kg	0.0032	0.00090	1
o-Xylene	ND		mg/kg	0.0016	0.00047	1
Xylenes, Total	ND		mg/kg	0.0016	0.00047	1
Isopropylbenzene	ND		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0032	0.00054	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-02
Client ID: GPR1101-07-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 11:10
Analyst: AJK
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0030	0.00031	1
Benzene	0.0066		mg/kg	0.00076	0.00025	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00039	1
Toluene	0.0039		mg/kg	0.0015	0.00083	1
1,2-Dibromoethane	ND		mg/kg	0.00076	0.00045	1
Ethylbenzene	0.0043		mg/kg	0.0015	0.00021	1
p/m-Xylene	0.019		mg/kg	0.0030	0.00085	1
o-Xylene	0.010		mg/kg	0.0015	0.00044	1
Xylenes, Total	0.029		mg/kg	0.0015	0.00044	1
Isopropylbenzene	0.26		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.0034		mg/kg	0.0030	0.00029	1
1,2,4-Trimethylbenzene	0.013		mg/kg	0.0030	0.00051	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	**272**	Q	70-130
Dibromofluoromethane	75		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-03
Client ID: GPR1101-08-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:15
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/16/23 14:15
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0025	0.00025	1
Benzene	ND		mg/kg	0.00062	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00032	1
Toluene	ND		mg/kg	0.0012	0.00067	1
1,2-Dibromoethane	ND		mg/kg	0.00062	0.00036	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0025	0.00069	1
o-Xylene	ND		mg/kg	0.0012	0.00036	1
Xylenes, Total	ND		mg/kg	0.0012	0.00036	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0025	0.00024	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0025	0.00041	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-04
Client ID: GPR1101-08-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 09:25
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 01:40
Analyst: AJK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00067	1
o-Xylene	ND		mg/kg	0.0012	0.00035	1
Xylenes, Total	ND		mg/kg	0.0012	0.00035	1
Isopropylbenzene	ND		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-05
Client ID: GPR270-14-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:20
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 02:10
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00020	1
Benzene	ND		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00097	0.00025	1
Toluene	ND		mg/kg	0.00097	0.00053	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	ND		mg/kg	0.00097	0.00014	1
p/m-Xylene	ND		mg/kg	0.0019	0.00054	1
o-Xylene	ND		mg/kg	0.00097	0.00028	1
Xylenes, Total	ND		mg/kg	0.00097	0.00028	1
Isopropylbenzene	ND		mg/kg	0.00097	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-06
Client ID: GPR270-14-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/11/23 11:12
Analyst: JIC
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00028	J	mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.0014		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	ND		mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0043		mg/kg	0.0026	0.00073	1
o-Xylene	0.0088		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.013		mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0084		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.0099		mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.027		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	**57**	Q	70-130
4-Bromofluorobenzene	**4360**	Q	70-130
Dibromofluoromethane	**132**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-06
Client ID: GPR270-14-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 12:40
Analyst: AJK
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.18	0.018	1
Benzene	0.53		mg/kg	0.045	0.015	1
1,2-Dichloroethane	ND		mg/kg	0.090	0.023	1
Toluene	1.1		mg/kg	0.090	0.049	1
1,2-Dibromoethane	ND		mg/kg	0.045	0.026	1
Ethylbenzene	0.12		mg/kg	0.090	0.013	1
p/m-Xylene	0.75		mg/kg	0.18	0.050	1
o-Xylene	0.11		mg/kg	0.090	0.026	1
Xylenes, Total	0.86		mg/kg	0.090	0.026	1
Isopropylbenzene	0.021	J	mg/kg	0.090	0.0098	1
1,3,5-Trimethylbenzene	0.036	J	mg/kg	0.18	0.017	1
1,2,4-Trimethylbenzene	0.12	J	mg/kg	0.18	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-07
Client ID: GPR270-14-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/12/23 12:10
Analyst: AJK
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0032	0.00032	1
Benzene	ND		mg/kg	0.00080	0.00026	1
1,2-Dichloroethane	ND		mg/kg	0.0016	0.00041	1
Toluene	ND		mg/kg	0.0016	0.00086	1
1,2-Dibromoethane	ND		mg/kg	0.00080	0.00047	1
Ethylbenzene	ND		mg/kg	0.0016	0.00022	1
p/m-Xylene	ND		mg/kg	0.0032	0.00089	1
o-Xylene	0.0015	J	mg/kg	0.0016	0.00046	1
Xylenes, Total	0.0015	J	mg/kg	0.0016	0.00046	1
Isopropylbenzene	0.0053		mg/kg	0.0016	0.00017	1
1,3,5-Trimethylbenzene	0.00041	J	mg/kg	0.0032	0.00031	1
1,2,4-Trimethylbenzene	0.0013	J	mg/kg	0.0032	0.00053	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	**191**	Q	70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-08
Client ID: FB-231205
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 13:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/08/23 14:23
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/08/23 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-08
Client ID: FB-231205
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 13:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/23 23:09
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-09
Client ID: TB-231205
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 00:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 12/08/23 14:31
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/08/23 09:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-09
Client ID: TB-231205
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 00:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/09/23 23:35
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 12/08/23 13:32
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 12/08/23 09:28

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 08-09 Batch: WG1861398-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371591

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/09/23 21:53
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1862398-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/10/23 18:47
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04-05 Batch: WG1862827-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371591

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/11/23 10:20
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06 Batch: WG1862852-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371591

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/23 10:09
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,07 Batch: WG1862942-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371591

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/12/23 10:09
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 06 Batch: WG1862943-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2371591

Project Number: 200.00135.005 **Report Date:** 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/16/23 13:24
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,03 Batch: WG1865194-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 08-09		Batch: WG1861398-2						
1,2-Dibromoethane	98		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1862398-3 WG1862398-4								
Methyl tert butyl ether	100		110		63-130	10		20
Benzene	110		100		70-130	10		20
1,2-Dichloroethane	99		99		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		103		70-130
Toluene-d8	107		109		70-130
4-Bromofluorobenzene	118		116		70-130
Dibromofluoromethane	97		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04-05 Batch: WG1862827-3 WG1862827-4								
Methyl tert butyl ether	94		103		66-130	9		30
Benzene	85		88		70-130	3		30
1,2-Dichloroethane	92		90		70-130	2		30
Toluene	84		84		70-130	0		30
1,2-Dibromoethane	83		81		70-130	2		30
Ethylbenzene	87		87		70-130	0		30
p/m-Xylene	87		87		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	83		84		70-130	1		30
1,3,5-Trimethylbenzene	83		83		70-130	0		30
1,2,4-Trimethylbenzene	83		83		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	94		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06 Batch: WG1862852-3 WG1862852-4								
Methyl tert butyl ether	116		112		66-130	4		30
Benzene	107		103		70-130	4		30
1,2-Dichloroethane	111		108		70-130	3		30
Toluene	98		97		70-130	1		30
1,2-Dibromoethane	97		93		70-130	4		30
Ethylbenzene	103		100		70-130	3		30
p/m-Xylene	105		102		70-130	3		30
o-Xylene	104		102		70-130	2		30
Isopropylbenzene	93		98		70-130	5		30
1,3,5-Trimethylbenzene	100		97		70-130	3		30
1,2,4-Trimethylbenzene	99		96		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	97		98		70-130
4-Bromofluorobenzene	93		93		70-130
Dibromofluoromethane	101		101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,07 Batch: WG1862942-3 WG1862942-4								
Methyl tert butyl ether	127		115		66-130	10		30
Benzene	94		95		70-130	1		30
1,2-Dichloroethane	99		100		70-130	1		30
Toluene	90		90		70-130	0		30
1,2-Dibromoethane	91		90		70-130	1		30
Ethylbenzene	92		91		70-130	1		30
p/m-Xylene	92		93		70-130	1		30
o-Xylene	92		93		70-130	1		30
Isopropylbenzene	90		92		70-130	2		30
1,3,5-Trimethylbenzene	89		90		70-130	1		30
1,2,4-Trimethylbenzene	88		90		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		109		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 06 Batch: WG1862943-3 WG1862943-4								
Methyl tert butyl ether	127		115		66-130	10		30
Benzene	94		95		70-130	1		30
1,2-Dichloroethane	99		100		70-130	1		30
Toluene	90		90		70-130	0		30
1,2-Dibromoethane	91		90		70-130	1		30
Ethylbenzene	92		91		70-130	1		30
p/m-Xylene	92		93		70-130	1		30
o-Xylene	92		93		70-130	1		30
Isopropylbenzene	90		92		70-130	2		30
1,3,5-Trimethylbenzene	89		90		70-130	1		30
1,2,4-Trimethylbenzene	88		90		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		108		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,03 Batch: WG1865194-3 WG1865194-4								
Methyl tert butyl ether	102		98		66-130	4		30
Benzene	106		104		70-130	2		30
1,2-Dichloroethane	97		96		70-130	1		30
Toluene	105		103		70-130	2		30
1,2-Dibromoethane	96		95		70-130	1		30
Ethylbenzene	106		106		70-130	0		30
p/m-Xylene	108		107		70-130	1		30
o-Xylene	102		102		70-130	0		30
Isopropylbenzene	109		109		70-130	0		30
1,3,5-Trimethylbenzene	102		104		70-130	2		30
1,2,4-Trimethylbenzene	103		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	95		100		70-130
Dibromofluoromethane	110		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-01
Client ID: GPR1101-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 08:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/23 06:46
Analyst: ALS
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 12/14/23 15:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.095		mg/kg	0.040	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	0.14		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.039	1
Pyrene	0.20		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.097	J	mg/kg	0.12	0.022	1
Chrysene	0.14		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.20		mg/kg	0.12	0.034	1
Benzo(a)pyrene	0.12	J	mg/kg	0.16	0.049	1
Indeno(1,2,3-cd)pyrene	0.077	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.089	J	mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	46		30-120
4-Terphenyl-d14	35		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-02 D
Client ID: GPR1101-07-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/12/23 10:58
Analyst: ALS
Percent Solids: 65%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	23.		mg/kg	0.25	0.15	5
Fluorene	7.7		mg/kg	1.3	0.12	5
Phenanthrene	20.		mg/kg	0.76	0.15	5
Anthracene	4.1		mg/kg	0.76	0.25	5
Pyrene	3.0		mg/kg	0.76	0.13	5
Benzo(a)anthracene	1.4		mg/kg	0.76	0.14	5
Chrysene	1.8		mg/kg	0.76	0.13	5
Benzo(b)fluoranthene	1.2		mg/kg	0.76	0.21	5
Benzo(a)pyrene	1.2		mg/kg	1.0	0.31	5
Indeno(1,2,3-cd)pyrene	1.1		mg/kg	1.0	0.18	5
Benzo(ghi)perylene	1.4		mg/kg	1.0	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**127**	Q	23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	88		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-03
Client ID: GPR1101-08-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:15
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/15/23 17:35
Analyst: ALS
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/14/23 15:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.35		mg/kg	0.047	0.029	1
Fluorene	0.028	J	mg/kg	0.24	0.023	1
Phenanthrene	0.30		mg/kg	0.14	0.029	1
Anthracene	0.075	J	mg/kg	0.14	0.046	1
Pyrene	0.40		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.22		mg/kg	0.14	0.027	1
Chrysene	0.25		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.33		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.23		mg/kg	0.19	0.058	1
Indeno(1,2,3-cd)pyrene	0.14	J	mg/kg	0.19	0.033	1
Benzo(ghi)perylene	0.18	J	mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	39		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-04
Client ID: GPR1101-08-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:25
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 16:26
Analyst: LJG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.53		mg/kg	0.047	0.029	1
Fluorene	0.094	J	mg/kg	0.24	0.023	1
Phenanthrene	0.27		mg/kg	0.14	0.029	1
Anthracene	0.17		mg/kg	0.14	0.046	1
Pyrene	0.69		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.65		mg/kg	0.14	0.027	1
Chrysene	0.56		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.66		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.64		mg/kg	0.19	0.058	1
Indeno(1,2,3-cd)pyrene	0.32		mg/kg	0.19	0.033	1
Benzo(ghi)perylene	0.34		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-05
Client ID: GPR270-14-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 10:20
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/07/23 16:44
Analyst: LJG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.53		mg/kg	0.040	0.024	1
Fluorene	0.13	J	mg/kg	0.20	0.019	1
Phenanthrene	0.14		mg/kg	0.12	0.024	1
Anthracene	0.17		mg/kg	0.12	0.039	1
Pyrene	0.37		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.16		mg/kg	0.12	0.022	1
Chrysene	0.17		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.14		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.13	J	mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	0.078	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.10	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-06 D
Client ID: GPR270-14-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 10:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/12/23 11:21
Analyst: ALS
Percent Solids: 66%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	11.		mg/kg	0.25	0.15	5
Fluorene	5.0		mg/kg	1.2	0.12	5
Phenanthrene	4.7		mg/kg	0.75	0.15	5
Anthracene	3.8		mg/kg	0.75	0.24	5
Pyrene	8.4		mg/kg	0.75	0.12	5
Benzo(a)anthracene	2.7		mg/kg	0.75	0.14	5
Chrysene	2.7		mg/kg	0.75	0.13	5
Benzo(b)fluoranthene	2.0		mg/kg	0.75	0.21	5
Benzo(a)pyrene	1.8		mg/kg	0.99	0.30	5
Indeno(1,2,3-cd)pyrene	1.0		mg/kg	0.99	0.17	5
Benzo(ghi)perylene	0.98	J	mg/kg	0.99	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**126**	Q	23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	79		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-07 D
Client ID: GPR270-14-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 10:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/12/23 11:44
Analyst: LJG
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	13.		mg/kg	0.26	0.16	5
Fluorene	4.8		mg/kg	1.3	0.12	5
Phenanthrene	13.		mg/kg	0.77	0.16	5
Anthracene	4.7		mg/kg	0.77	0.25	5
Pyrene	9.5		mg/kg	0.77	0.13	5
Benzo(a)anthracene	3.3		mg/kg	0.77	0.14	5
Chrysene	3.8		mg/kg	0.77	0.13	5
Benzo(b)fluoranthene	2.8		mg/kg	0.77	0.22	5
Benzo(a)pyrene	2.5		mg/kg	1.0	0.31	5
Indeno(1,2,3-cd)pyrene	1.2		mg/kg	1.0	0.18	5
Benzo(ghi)perylene	1.3		mg/kg	1.0	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	53		30-120
4-Terphenyl-d14	57		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-08
Client ID: FB-231205
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 13:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 15:55
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 17:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	57		15-120
4-Terphenyl-d14	58		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/07/23 09:13
Analyst: LJG

Extraction Method: EPA 3546
Extraction Date: 12/06/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,04-07 Batch: WG1860648-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 12/09/23 14:38
Analyst: CMM

Extraction Method: EPA 3510C
Extraction Date: 12/08/23 14:46

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 08 Batch: WG1861610-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	0.01	J	ug/l	0.10	0.01
Phenanthrene	0.02	J	ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.06	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.09		ug/l	0.05	0.02
Chrysene	0.06	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.09		ug/l	0.05	0.01
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	0.06	J	ug/l	0.10	0.01
Benzo(ghi)perylene	0.06	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	76		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/15/23 02:35
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/14/23 15:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1864093-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	62		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1860648-2 WG1860648-3								
Naphthalene	57		58		40-140	2		50
Fluorene	54		56		40-140	4		50
Phenanthrene	54		57		40-140	5		50
Anthracene	56		59		40-140	5		50
Pyrene	56		60		35-142	7		50
Benzo(a)anthracene	60		61		40-140	2		50
Chrysene	59		62		40-140	5		50
Benzo(b)fluoranthene	59		64		40-140	8		50
Benzo(a)pyrene	63		67		40-140	6		50
Indeno(1,2,3-cd)pyrene	57		61		40-140	7		50
Benzo(ghi)perylene	57		61		40-140	7		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	59		60		23-120
2-Fluorobiphenyl	55		58		30-120
4-Terphenyl-d14	55		58		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 08 Batch: WG1861610-2 WG1861610-3								
Naphthalene	66		60		40-140	10		40
Fluorene	70		66		40-140	6		40
Phenanthrene	73		68		40-140	7		40
Anthracene	79		74		40-140	7		40
Pyrene	78		74		26-127	5		40
Benzo(a)anthracene	80		76		40-140	5		40
Chrysene	74		69		40-140	7		40
Benzo(b)fluoranthene	88		78		40-140	12		40
Benzo(a)pyrene	81		76		40-140	6		40
Indeno(1,2,3-cd)pyrene	93		89		40-140	4		40
Benzo(ghi)perylene	80		76		40-140	5		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		76		23-120
2-Fluorobiphenyl	68		63		15-120
4-Terphenyl-d14	73		70		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1864093-2 WG1864093-3								
Naphthalene	63		57		40-140	10		50
Fluorene	66		59		40-140	11		50
Phenanthrene	68		60		40-140	13		50
Anthracene	71		62		40-140	14		50
Pyrene	69		60		35-142	14		50
Benzo(a)anthracene	70		61		40-140	14		50
Chrysene	70		62		40-140	12		50
Benzo(b)fluoranthene	68		57		40-140	18		50
Benzo(a)pyrene	75		66		40-140	13		50
Indeno(1,2,3-cd)pyrene	63		56		40-140	12		50
Benzo(ghi)perylene	62		54		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	66		61		23-120
2-Fluorobiphenyl	66		59		30-120
4-Terphenyl-d14	69		61		18-120

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-01
Client ID: GPR1101-07-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 08:45
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	37.3		mg/kg	2.36	0.126	1	12/19/23 06:40	12/19/23 20:29	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-02
Client ID: GPR1101-07-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	401		mg/kg	3.00	0.161	1	12/07/23 07:10	12/07/23 21:16	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-03
Client ID: GPR1101-08-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:15
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	101		mg/kg	2.76	0.148	1	12/19/23 06:40	12/19/23 20:33	EPA 3050B	1,6010D	JMF

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-04
Client ID: GPR1101-08-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:25
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	36.0		mg/kg	2.78	0.149	1	12/07/23 07:10	12/07/23 21:19	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-05
Client ID: GPR270-14-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:20
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	182		mg/kg	2.41	0.129	1	12/07/23 07:10	12/07/23 21:22	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-06
Client ID: GPR270-14-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:30
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	422		mg/kg	2.89	0.155	1	12/07/23 07:10	12/07/23 21:26	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-07
Client ID: GPR270-14-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 10:40
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	385		mg/kg	3.01	0.161	1	12/07/23 07:10	12/07/23 21:38	EPA 3050B	1,6010D	AMW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2371591
Project Number: 200.00135.005
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-08
Client ID: FB-231205
Sample Location: PHILADELPHIA, PA
Date Collected: 12/05/23 13:00
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	12/11/23 11:50	12/11/23 16:22	EPA 3005A	1,6020B	NTB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,04-07 Batch: WG1860471-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/07/23 07:10	12/07/23 19:43	1,6010D	AMW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08 Batch: WG1860657-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	12/11/23 11:50	12/11/23 15:13	1,6020B	NTB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1864084-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	12/19/23 06:40	12/19/23 19:23	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-07 Batch: WG1860471-2 SRM Lot Number: D122-540								
Lead, Total	106		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1860657-2								
Lead, Total	105		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1864084-2 SRM Lot Number: D122-540								
Lead, Total	104		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-07 QC Batch ID: WG1860471-3 QC Sample: L2371365-02 Client ID: MS Sample												
Lead, Total	340	64.7	362	**34**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1860657-3 QC Sample: L2371776-01 Client ID: MS Sample												
Lead, Total	ND	530	590.5	111		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1864084-3 QC Sample: L2371365-19 Client ID: MS Sample												
Lead, Total	86.4	48.6	138	106		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,04-07 QC Batch ID: WG1860471-4 QC Sample: L2371365-02 Client ID: DUP Sample						
Lead, Total	340	249	mg/kg	**31**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1864084-4 QC Sample: L2371365-19 Client ID: DUP Sample						
Lead, Total	86.4	164	mg/kg	**62**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-01
Client ID: GPR1101-07-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 08:45
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.4		%	0.100	NA	1	-	12/14/23 10:08	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-02
Client ID: GPR1101-07-2.5-3.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 09:00
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.9		%	0.100	NA	1	-	12/07/23 16:47	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-03
Client ID: GPR1101-08-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 12/05/23 09:15
Date Received: 12/05/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.0		%	0.100	NA	1	-	12/14/23 10:08	121,2540G	GAG

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-04
Client ID: GPR1101-08-4.5-5.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 09:25
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.9		%	0.100	NA	1	-	12/07/23 16:47	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-05
Client ID: GPR270-14-0.5-1.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 10:20
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	12/07/23 16:47	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-06
Client ID: GPR270-14-2.0-2.5
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 10:30
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.4		%	0.100	NA	1	-	12/07/23 16:47	121,2540G	SJB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005
Lab Number: L2371591
Report Date: 12/20/23

SAMPLE RESULTS

Lab ID: L2371591-07
Client ID: GPR270-14-3.5-4.0
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 12/05/23 10:40
Date Received: 12/05/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.4		%	0.100	NA	1	-	12/07/23 16:47	121,2540G	SJB

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.005

Lab Number: L2371591

Report Date: 12/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02,04-07 QC Batch ID: WG1861152-1 QC Sample: L2371873-08 Client ID: DUP Sample						
Solids, Total	25.2	25.4	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1863857-1 QC Sample: L2371591-01 Client ID: GPR1101-07-0.5-1.0						
Solids, Total	82.4	77.6	%	6		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371591-01A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-01B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-01C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-01D	Plastic 120ml unpreserved	A	NA		2.1	Y	Absent		TS(7)
L2371591-01E	Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-01F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-02A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-02B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-02C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-02D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2371591-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-02F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-03A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-03B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-03C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-03D	Plastic 120ml unpreserved	A	NA		2.1	Y	Absent		TS(7)
L2371591-03E	Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-03F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-04A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-04B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-04C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-04D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2371591-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.005

Lab Number: L2371591
Report Date: 12/20/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2371591-04F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-05A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-05B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-05C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-05D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2371591-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-05F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-06A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2371591-06B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260H(14),PA-8260HLW(14)
L2371591-06C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260H(14),PA-8260HLW(14)
L2371591-06D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2371591-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-06F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-07A	Vial MeOH preserved	A	NA		2.1	Y	Absent		PA-8260HLW(14)
L2371591-07B	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-07C	Vial water preserved	A	NA		2.1	Y	Absent	06-DEC-23 11:27	PA-8260HLW(14)
L2371591-07D	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2371591-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2371591-07F	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		PA-PAH(14)
L2371591-08A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2371591-08B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2371591-08C	Vial HCl preserved	A	NA		2.1	Y	Absent		8011(14)
L2371591-08D	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020T-PPB(180)
L2371591-08E	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2371591-08F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2371591-09A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2371591-09B	Vial HCl preserved	A	NA		2.1	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2371591
Project Number:	200.00135.005	**Report Date:**	12/20/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 12/06/23

ALPHA Job #: L2371591

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0099
Fax:
Email: william.schmidt@ransomenv.com

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project # 200.00135.005
(Use Project name as Project #)
Project Manager: William Schmidt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☑ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information

☑ Same as Client Info
PO #

Site Information

Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PADEP Short List 1-3 (see attached)	VOCs	Sample Specific Comments	Total Bottle
11591-01	GPR1101-07 - 0.5-1.0	12/05/23	8:45	S	ND	H		Hold	6
-02	GPR1101-07 - 2.5-3.0		9:00			X			6
-03	GPR1101-08 - 0.5-1.0		9:15			H		Hold	6
-04	GPR1101-08 - 4.5-5.0		9:25			X			6
-05	GPR270-14-0.5-1.0		10:20			X			6
-06	GPR270-14-2.0-2.5		10:30			X			6
-07	GPR270-14-3.5-4.0		10:40	↓		X			6
-08	FB-231205		13:00	blank		X	X		6
-09	TB-231205	↓	13:00	↓	↓		X		1

Preservative Code:
= None
= HCl
= HNO_3
= H_2SO_4
= NaOH
= MeOH
= $NaHSO_4$
= $Na_2S_2O_3$
= Zn Ac/NaOH
= Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	G	A						
Preservative	A,B	B						

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	12/05/23 15:30	[illegible]	12/5/23 15:30
[illegible]	12/5/23 1800	[illegible]	12/5/23 1800
[illegible]	12/5/23 2200	Anthony Green	DEC 05 2023 2152
Anthony Green	12/6/23 0730	[illegible]	12/6/23 0730
[illegible]	12/6/23 0730	[illegible]	12/6/23 [illegible]

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

L2371591

PADEP Shortlist 1-5

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Naphthalene
Phenanthrene
Pyrene

Lead

PADEP Shortlist 1-6

Benzene
Cumene
1,2-Dibromoethane
1,2-Dichloroethane
Ethyl Benzene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethlybenzene
Methyl-tert-butyl-ether
Xylenes (total)

Anthracene
Benzo(a)anthacene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Chrysene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Lead

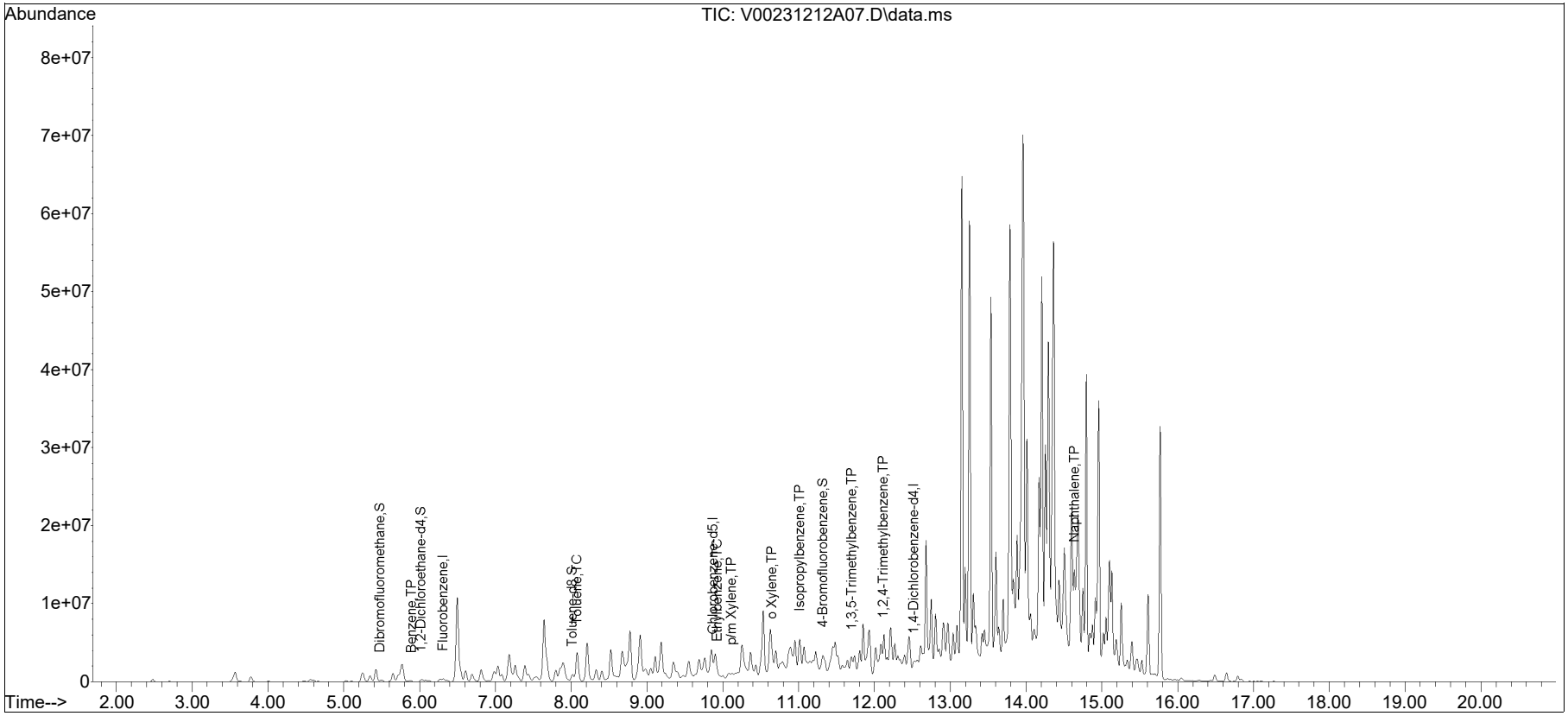
Serial_No:12202311:18

Quantitation Report (QT Reviewed)

Data Path : K:\VOA100\2023\231212A\
Data File : V00231212A07.D
Acq On : 12 Dec 2023 11:10 am
Operator : VOA100:AJK
Sample : l2371591-02,31,5.06,5,,c
Misc : WG1862942,ICAL20583
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 12 12:23:01 2023
Quant Method : K:\VOA100\2023\231212A\V100_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 06:44:48 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list212A02.D•

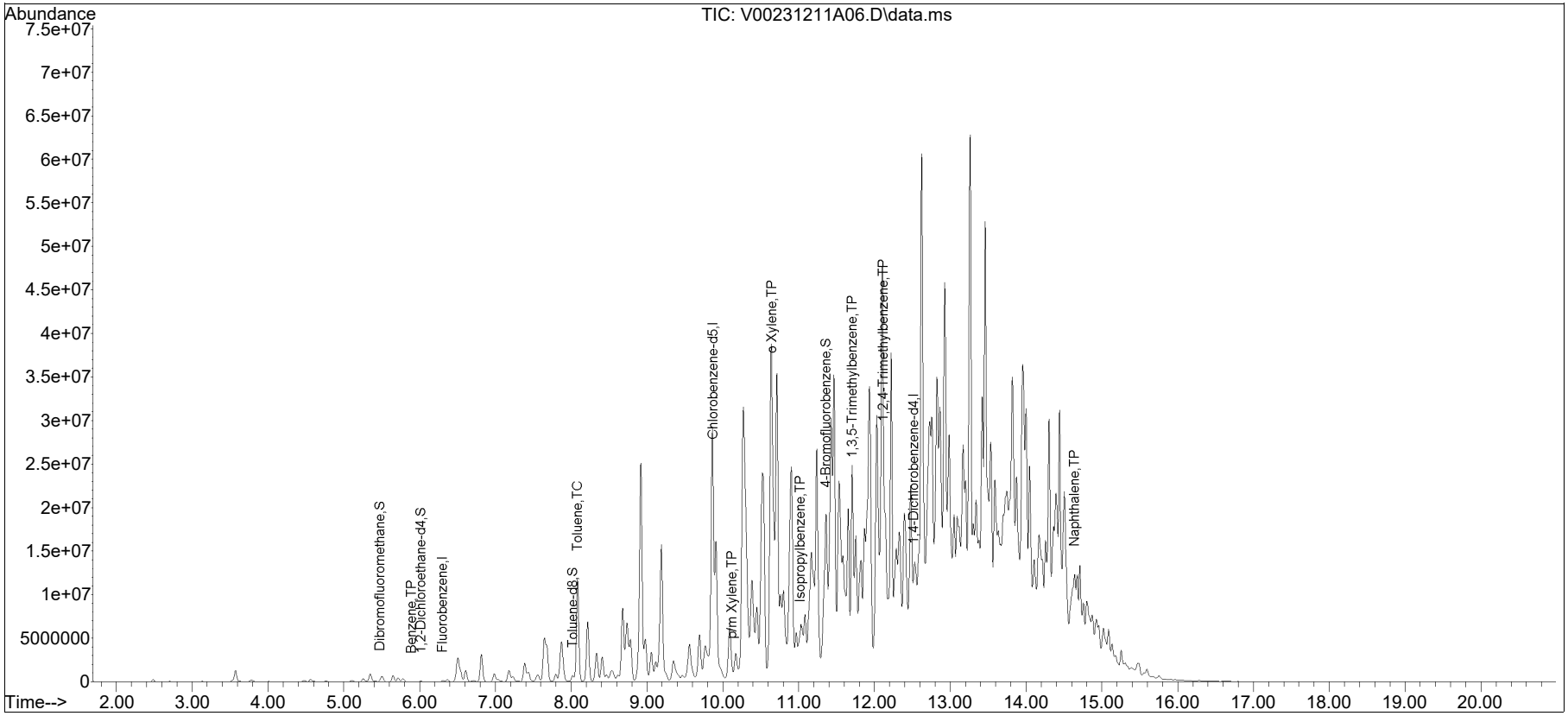


Quantitation Report (QT Reviewed)

Data Path : K:\VOA100\2023\231211A\
Data File : V00231211A06.D
Acq On : 11 Dec 2023 11:12 am
Operator : VOA100:JIC
Sample : L2371591-06,31,5.76,5,,B
Misc : WG1862852,ICAL20583
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 12 09:14:34 2023
Quant Method : K:\VOA100\2023\231211A\V100_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 06:44:48 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list211A01.D•



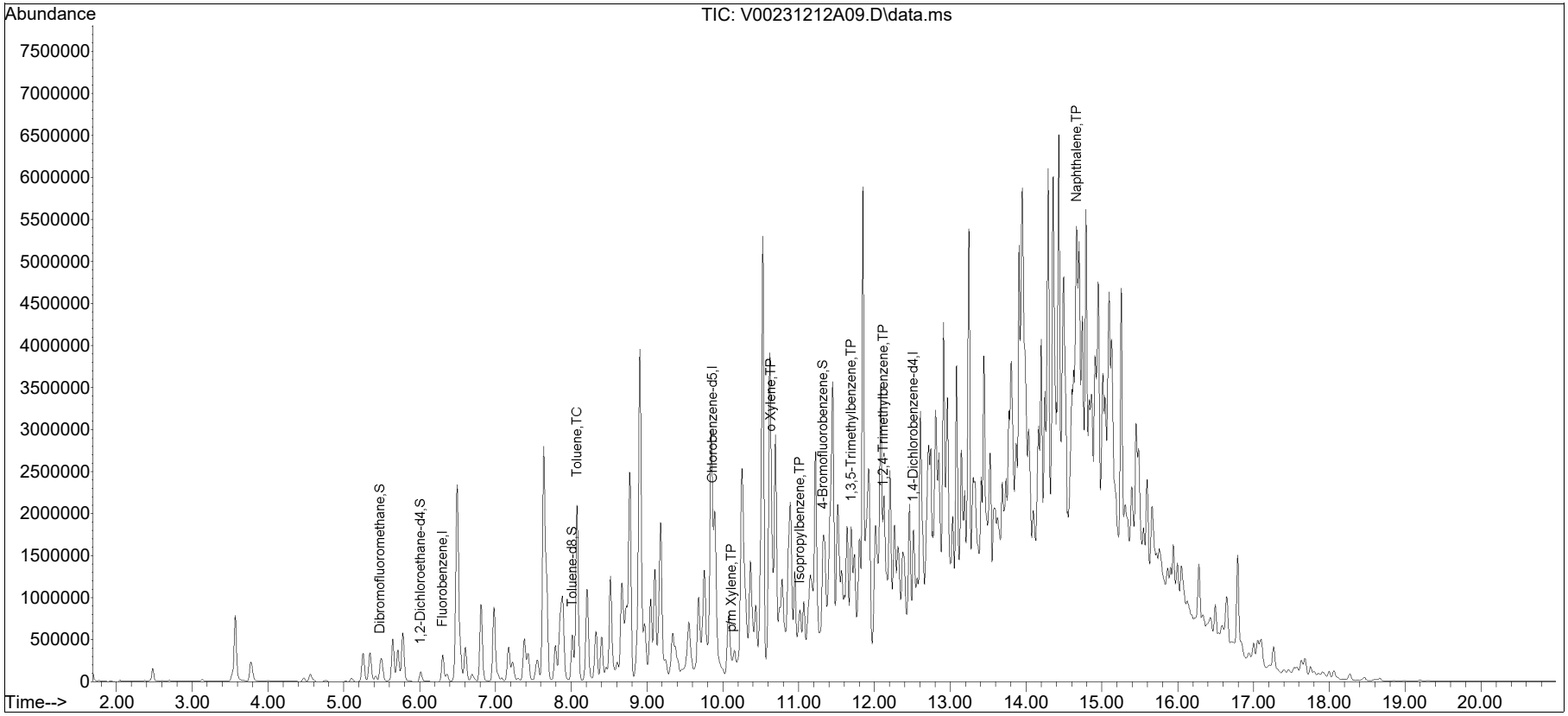
V100_231122B_8260.m Tue Dec 12 10:13:13 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : K:\VOA100\2023\231212A\
Data File : V00231212A09.D
Acq On : 12 Dec 2023 12:10 pm
Operator : VOA100:AJK
Sample : l2371591-07,31,4.95,5,,c
Misc : WG1862942,ICAL20583
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 12 13:06:36 2023
Quant Method : K:\VOA100\2023\231212A\V100_231122B_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Nov 23 06:44:48 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list212A02.D•



ANALYTICAL REPORT

Lab Number:	L2421516
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY
Project Number:	200.00135
Report Date:	05/06/24

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2421516-01	TG06-MW01-1.5-2.0	SOIL	PHILADELPHIA, PA	04/18/24 10:45	04/18/24
L2421516-02	TG06-MW01-5.0-5.5	SOIL	PHILADELPHIA, PA	04/18/24 10:55	04/18/24
L2421516-03	TG06-MW01-5.5-6.0	SOIL	PHILADELPHIA, PA	04/18/24 11:05	04/18/24
L2421516-04	GPR270-15-0.5-1.0	SOIL	PHILADELPHIA, PA	04/18/24 12:05	04/18/24
L2421516-05	GPR270-15-3.0-3.5	SOIL	PHILADELPHIA, PA	04/18/24 12:15	04/18/24
L2421516-06	GPR270-16-3.5-4.0	SOIL	PHILADELPHIA, PA	04/18/24 11:50	04/18/24
L2421516-07	GPR270-17-1.5-2.0	SOIL	PHILADELPHIA, PA	04/18/24 09:50	04/18/24
L2421516-08	GPR270-17-2.0-2.5	SOIL	PHILADELPHIA, PA	04/18/24 09:55	04/18/24
L2421516-09	GPR270-17-5.5-6.0	SOIL	PHILADELPHIA, PA	04/18/24 10:00	04/18/24
L2421516-10	GPR1038-08-1.5-2.0	SOIL	PHILADELPHIA, PA	04/18/24 15:40	04/18/24
L2421516-11	GPR1038-08-2.5-3.0	SOIL	PHILADELPHIA, PA	04/18/24 15:45	04/18/24
L2421516-12	GPR1038-08-6.5-7.0	SOIL	PHILADELPHIA, PA	04/18/24 15:50	04/18/24
L2421516-13	GPR1038-09-1.5-2.0	SOIL	PHILADELPHIA, PA	04/18/24 15:10	04/18/24
L2421516-14	GPR1038-09-2.5-3.0	SOIL	PHILADELPHIA, PA	04/18/24 15:15	04/18/24
L2421516-15	GPR1038-09-6.5-7.0	SOIL	PHILADELPHIA, PA	04/18/24 15:20	04/18/24
L2421516-16	GPR1038-10-1.5-2.0	SOIL	PHILADELPHIA, PA	04/18/24 14:35	04/18/24
L2421516-17	GPR1038-10-4.5-5.0	SOIL	PHILADELPHIA, PA	04/18/24 14:40	04/18/24
L2421516-18	GPR1038-10-6.5-7.0	SOIL	PHILADELPHIA, PA	04/18/24 14:45	04/18/24
L2421516-19	GPR1038-11-1.0-1.5	SOIL	PHILADELPHIA, PA	04/18/24 14:00	04/18/24
L2421516-20	GPR1038-11-4.5-5.0	SOIL	PHILADELPHIA, PA	04/18/24 14:05	04/18/24
L2421516-21	GPR1038-11-6.5-7.0	SOIL	PHILADELPHIA, PA	04/18/24 14:10	04/18/24
L2421516-22	GPR1038-12-1.0-1.5	SOIL	PHILADELPHIA, PA	04/18/24 16:05	04/18/24
L2421516-23	GPR1038-12-2.5-3.0	SOIL	PHILADELPHIA, PA	04/18/24 16:10	04/18/24
L2421516-24	GPR1038-12-4.5-5.0	SOIL	PHILADELPHIA, PA	04/18/24 16:15	04/18/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2421516-25	FB-240418	WATER	PHILADELPHIA, PA	04/18/24 14:20	04/18/24
L2421516-26	TB-240418	WATER	PHILADELPHIA, PA	03/13/24 00:00	04/18/24

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

Case Narrative (continued)

Report Submission

May 06, 2024: This final report includes the results of the following analyses:

L2421516-07 and -09: Volatile Organics

April 26, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2421516-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (147%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Semivolatile Organics by SIM

L2421516-25: The Field Blank has a result for Naphthalene present above the reporting limit; however, re-extraction achieved similar results. The results of the original analysis are reported.

Total Metals

L2421516-01 through -03, -05, -06, -11, -14, -17, -20, and -23: The sample has an elevated detection limit for lead due to the dilution required by the sample matrix.

The WG1911924-4 Laboratory Duplicate RPD for lead (35%), performed on L2421516-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative Date: 05/06/24

ORGANICS

VOLATILES

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-01
Client ID: TG06-MW01-1.5-2.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 10:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 10:52
Analyst: JIC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	0.40		mg/kg	0.025	0.0083	1
1,2-Dichloroethane	ND		mg/kg	0.050	0.013	1
Toluene	0.032	J	mg/kg	0.050	0.027	1
1,2-Dibromoethane	ND		mg/kg	0.025	0.015	1
Ethylbenzene	2.5		mg/kg	0.050	0.0070	1
p/m-Xylene	0.87		mg/kg	0.10	0.028	1
o-Xylene	0.12		mg/kg	0.050	0.014	1
Xylenes, Total	0.99		mg/kg	0.050	0.014	1
Isopropylbenzene	1.8		mg/kg	0.050	0.0054	1
1,3,5-Trimethylbenzene	1.1		mg/kg	0.10	0.0096	1
1,2,4-Trimethylbenzene	14.		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	**147**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-02
Client ID: TG06-MW01-5.0-5.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 10:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 09:57
Analyst: JIC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.012		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	0.0058		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00041	1
Ethylbenzene	0.020		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.022		mg/kg	0.0028	0.00078	1
o-Xylene	0.014		mg/kg	0.0014	0.00040	1
Xylenes, Total	0.036		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.10		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.012		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.088		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	104		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-03 D2
Client ID: TG06-MW01-5.5-6.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 11:48
Analyst: AJK
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.63	0.063	2.5
Benzene	2.4		mg/kg	0.16	0.052	2.5
1,2-Dichloroethane	ND		mg/kg	0.31	0.081	2.5
Toluene	4.3		mg/kg	0.31	0.17	2.5
1,2-Dibromoethane	ND		mg/kg	0.16	0.092	2.5
Ethylbenzene	1.7		mg/kg	0.31	0.044	2.5
p/m-Xylene	4.7		mg/kg	0.63	0.18	2.5
o-Xylene	0.80		mg/kg	0.31	0.091	2.5
Xylenes, Total	5.5		mg/kg	0.31	0.091	2.5
Isopropylbenzene	170	E	mg/kg	0.31	0.034	2.5
1,3,5-Trimethylbenzene	6.1		mg/kg	0.63	0.060	2.5
1,2,4-Trimethylbenzene	2.1		mg/kg	0.63	0.10	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	94		70-130

Project Name: PES REFINERY
Lab Number: L2421516
Project Number: 200.00135
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-03 D
Client ID: TG06-MW01-5.5-6.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 11:19
Analyst: JIC
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	180		mg/kg	1.2	0.14	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-05
Client ID: GPR270-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 12:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 09:30
Analyst: JIC
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00079	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.0012	J	mg/kg	0.0029	0.00081	1
o-Xylene	0.0010	J	mg/kg	0.0014	0.00042	1
Xylenes, Total	0.0022	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.00094	J	mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	111		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-06
Client ID: GPR270-16-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 11:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 22:48
Analyst: AJK
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	ND		mg/kg	0.00066	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	ND		mg/kg	0.0013	0.00072	1
1,2-Dibromoethane	ND		mg/kg	0.00066	0.00039	1
Ethylbenzene	ND		mg/kg	0.0013	0.00019	1
p/m-Xylene	ND		mg/kg	0.0026	0.00074	1
o-Xylene	ND		mg/kg	0.0013	0.00038	1
Xylenes, Total	ND		mg/kg	0.0013	0.00038	1
Isopropylbenzene	ND		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0026	0.00026	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	104		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-07
Client ID: GPR270-17-1.5-2.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 09:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/30/24 13:08
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00031	J	mg/kg	0.00049	0.00016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	98		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-08
Client ID: GPR270-17-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 09:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/24/24 10:24
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00032	J	mg/kg	0.00052	0.00017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	104		70-130

Project Name: PES REFINERY
Lab Number: L2421516
Project Number: 200.00135
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-09
Client ID: GPR270-17-5.5-6.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 10:00
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/30/24 13:29
Analyst: JIC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00058	0.00019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	93		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-25
Client ID: FB-240418
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 14:20
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/23/24 13:37
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 04/23/24 10:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.011	0.006	1	A

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-25
Client ID: FB-240418
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 14:20
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/23/24 16:03
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	107		70-130

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 04/23/24 12:55
Analyst: JKH

Extraction Method: EPA 8011
Extraction Date: 04/23/24 10:48

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 25 Batch: WG1912046-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/23/24 08:18
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 25 Batch: WG1912833-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	103		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/24/24 09:02
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02,05,08 Batch: WG1913189-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	107		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/24/24 09:02
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01,03 Batch: WG1913191-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	107		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/24/24 21:30
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06 Batch: WG1913231-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	101		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/25/24 11:21
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 03 Batch: WG1913321-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/30/24 11:08
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07,09 Batch: WG1915529-5					
Benzene	ND		mg/kg	0.00050	0.00017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 25		Batch: WG1912046-2						
1,2-Dibromoethane	110		-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 25 Batch: WG1912833-3 WG1912833-4								
Methyl tert butyl ether	80		85		63-130	6		20
Benzene	98		98		70-130	0		20
1,2-Dichloroethane	78		78		70-130	0		20
Toluene	91		92		70-130	1		20
Ethylbenzene	90		90		70-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	98		96		70-130	2		20
1,3,5-Trimethylbenzene	98		96		64-130	2		20
1,2,4-Trimethylbenzene	96		96		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	85		86		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	100		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02,05,08 Batch: WG1913189-3 WG1913189-4								
Methyl tert butyl ether	**143**	Q	**139**	Q	66-130	3		30
Benzene	111		108		70-130	3		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	103		100		70-130	3		30
1,2-Dibromoethane	112		112		70-130	0		30
Ethylbenzene	111		109		70-130	2		30
p/m-Xylene	107		104		70-130	3		30
o-Xylene	106		102		70-130	4		30
Isopropylbenzene	102		99		70-130	3		30
1,3,5-Trimethylbenzene	108		107		70-130	1		30
1,2,4-Trimethylbenzene	110		109		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		90		70-130
Toluene-d8	93		91		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	106		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01,03 Batch: WG1913191-3 WG1913191-4								
Methyl tert butyl ether	**143**	Q	**139**	Q	66-130	3		30
Benzene	111		108		70-130	3		30
1,2-Dichloroethane	98		97		70-130	1		30
Toluene	103		100		70-130	3		30
1,2-Dibromoethane	112		112		70-130	0		30
Ethylbenzene	111		109		70-130	2		30
p/m-Xylene	107		104		70-130	3		30
o-Xylene	106		102		70-130	4		30
Isopropylbenzene	102		99		70-130	3		30
1,3,5-Trimethylbenzene	108		107		70-130	1		30
1,2,4-Trimethylbenzene	110		109		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		90		70-130
Toluene-d8	93		91		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	106		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06 Batch: WG1913231-3 WG1913231-4								
Methyl tert butyl ether	92		92		66-130	0		30
Benzene	98		97		70-130	1		30
1,2-Dichloroethane	91		92		70-130	1		30
Toluene	95		94		70-130	1		30
1,2-Dibromoethane	91		92		70-130	1		30
Ethylbenzene	97		94		70-130	3		30
p/m-Xylene	99		97		70-130	2		30
o-Xylene	98		97		70-130	1		30
Isopropylbenzene	98		97		70-130	1		30
1,3,5-Trimethylbenzene	99		98		70-130	1		30
1,2,4-Trimethylbenzene	98		98		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		93		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	97		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 03 Batch: WG1913321-3 WG1913321-4								
Methyl tert butyl ether	97		124		66-130	24		30
Benzene	90		88		70-130	2		30
1,2-Dichloroethane	85		84		70-130	1		30
Toluene	83		80		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	88		86		70-130	2		30
p/m-Xylene	86		83		70-130	4		30
o-Xylene	85		82		70-130	4		30
Isopropylbenzene	79		80		70-130	1		30
1,3,5-Trimethylbenzene	87		87		70-130	0		30
1,2,4-Trimethylbenzene	89		90		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		89		70-130
Toluene-d8	91		90		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	106		122		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,09 Batch: WG1915529-3 WG1915529-4								
Benzene	104		101		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		102		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	95		97		70-130
Dibromofluoromethane	95		93		70-130

SEMIVOLATILES

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-01
Client ID: TG06-MW01-1.5-2.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/25/24 13:49
Analyst: IM
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 04/23/24 02:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.8		mg/kg	0.037	0.023	1
Fluorene	0.83		mg/kg	0.19	0.018	1
Phenanthrene	0.52		mg/kg	0.11	0.023	1
Anthracene	0.073	J	mg/kg	0.11	0.036	1
Pyrene	0.12		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.067	J	mg/kg	0.11	0.021	1
Chrysene	0.064	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.093	J	mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.071	J	mg/kg	0.15	0.046	1
Indeno(1,2,3-cd)pyrene	0.044	J	mg/kg	0.15	0.026	1
Benzo(ghi)perylene	0.060	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**214**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	76		18-120

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-02
Client ID: TG06-MW01-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 06:54
Analyst: MRG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.1		mg/kg	0.046	0.028	1
Fluorene	0.90		mg/kg	0.23	0.023	1
Phenanthrene	7.4		mg/kg	0.14	0.028	1
Anthracene	2.2		mg/kg	0.14	0.045	1
Pyrene	7.7		mg/kg	0.14	0.023	1
Benzo(a)anthracene	6.2		mg/kg	0.14	0.026	1
Chrysene	6.3		mg/kg	0.14	0.024	1
Benzo(a)pyrene	6.6		mg/kg	0.19	0.057	1
Indeno(1,2,3-cd)pyrene	3.4		mg/kg	0.19	0.032	1
Benzo(ghi)perylene	4.1		mg/kg	0.19	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	68		18-120

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-02 D
Client ID: TG06-MW01-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 16:44
Analyst: MRG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(b)fluoranthene	11.		mg/kg	0.70	0.20	5

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-03
Client ID: TG06-MW01-5.5-6.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/25/24 09:09
Analyst: IM
Percent Solids: 64%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	8.6		mg/kg	0.052	0.032	1
Fluorene	1.2		mg/kg	0.26	0.025	1
Phenanthrene	2.8		mg/kg	0.16	0.032	1
Anthracene	1.2		mg/kg	0.16	0.051	1
Pyrene	2.1		mg/kg	0.16	0.026	1
Benzo(a)anthracene	0.86		mg/kg	0.16	0.029	1
Chrysene	1.1		mg/kg	0.16	0.027	1
Benzo(b)fluoranthene	1.4		mg/kg	0.16	0.044	1
Benzo(a)pyrene	1.2		mg/kg	0.21	0.063	1
Indeno(1,2,3-cd)pyrene	0.79		mg/kg	0.21	0.036	1
Benzo(ghi)perylene	0.90		mg/kg	0.21	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	72		18-120

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-05
Client ID: GPR270-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 12:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 08:44
Analyst: MRG
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	10.	E	mg/kg	0.046	0.028	1
Fluorene	0.45		mg/kg	0.23	0.023	1
Phenanthrene	2.4		mg/kg	0.14	0.028	1
Anthracene	1.2		mg/kg	0.14	0.045	1
Pyrene	1.1		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.85		mg/kg	0.14	0.026	1
Chrysene	0.99		mg/kg	0.14	0.024	1
Benzo(a)pyrene	1.4		mg/kg	0.19	0.057	1
Indeno(1,2,3-cd)pyrene	0.97		mg/kg	0.19	0.032	1
Benzo(ghi)perylene	1.3		mg/kg	0.19	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	64		18-120

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-05 D
Client ID: GPR270-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 12:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 17:31
Analyst: MRG
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	12.		mg/kg	0.23	0.14	5
Benzo(b)fluoranthene	2.0		mg/kg	0.70	0.20	5

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-06
Client ID: GPR270-16-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 07:31
Analyst: MRG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	12.	E	mg/kg	0.048	0.029	1
Fluorene	1.4		mg/kg	0.24	0.023	1
Phenanthrene	3.6		mg/kg	0.14	0.029	1
Anthracene	1.6		mg/kg	0.14	0.047	1
Pyrene	2.2		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.99		mg/kg	0.14	0.027	1
Chrysene	1.5		mg/kg	0.14	0.025	1
Benzo(a)pyrene	1.8		mg/kg	0.19	0.058	1
Indeno(1,2,3-cd)pyrene	0.96		mg/kg	0.19	0.033	1
Benzo(ghi)perylene	1.3		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	64		18-120

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-06 D
Client ID: GPR270-16-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 04/24/24 17:07
Analyst: MRG
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 04/21/24 13:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	14.		mg/kg	0.24	0.14	5
Benzo(b)fluoranthene	3.1		mg/kg	0.72	0.20	5

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-25
Client ID: FB-240418
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 14:20
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 04/25/24 14:10
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/25/24 07:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.3		ug/l	0.10	0.05	1
Fluorene	0.04	J	ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.05	0.02	1
Anthracene	0.02	J	ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	62		41-149

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 04/21/24 13:33
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 04/20/24 13:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-03,05-06 Batch: WG1911151-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	69		18-120

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 04/25/24 09:50
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 04/22/24 20:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1911811-1					
Naphthalene	ND		mg/kg	0.033	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		25-120
Phenol-d6	83		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	72		30-120
2,4,6-Tribromophenol	75		10-136
4-Terphenyl-d14	83		18-120

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 04/25/24 12:47
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 04/25/24 07:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 25 Batch: WG1913093-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	60		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03,05-06 Batch: WG1911151-2 WG1911151-3								
Naphthalene	64		69		40-140	8		50
Fluorene	65		72		40-140	10		50
Phenanthrene	70		76		40-140	8		50
Anthracene	72		77		40-140	7		50
Pyrene	68		76		35-142	11		50
Benzo(a)anthracene	67		74		40-140	10		50
Chrysene	67		73		40-140	9		50
Benzo(b)fluoranthene	71		77		40-140	8		50
Benzo(a)pyrene	70		75		40-140	7		50
Indeno(1,2,3-cd)pyrene	70		79		40-140	12		50
Benzo(ghi)perylene	68		75		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	65		70		23-120
2-Fluorobiphenyl	63		70		30-120
4-Terphenyl-d14	66		75		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1911811-2 WG1911811-3								
Naphthalene	95		96		40-140	1		50
Fluorene	98		99		40-140	1		50
Phenanthrene	98		98		40-140	0		50
Anthracene	103		102		40-140	1		50
Pyrene	104		104		35-142	0		50
Benzo(a)anthracene	99		101		40-140	2		50
Chrysene	96		95		40-140	1		50
Benzo(b)fluoranthene	104		97		40-140	7		50
Benzo(a)pyrene	98		98		40-140	0		50
Indeno(1,2,3-cd)pyrene	106		105		40-140	1		50
Benzo(ghi)perylene	103		103		40-140	0		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	98		100		25-120
Phenol-d6	97		98		10-120
Nitrobenzene-d5	96		100		23-120
2-Fluorobiphenyl	100		101		30-120
2,4,6-Tribromophenol	128		127		10-136
4-Terphenyl-d14	109		107		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 25 Batch: WG1913093-2 WG1913093-3								
Naphthalene	63		58		40-140	8		40
Fluorene	66		57		40-140	15		40
Phenanthrene	62		56		40-140	10		40
Anthracene	66		60		40-140	10		40
Pyrene	66		58		26-127	13		40
Benzo(a)anthracene	64		57		40-140	12		40
Chrysene	64		58		40-140	10		40
Benzo(b)fluoranthene	67		58		40-140	14		40
Benzo(a)pyrene	68		60		40-140	13		40
Indeno(1,2,3-cd)pyrene	76		65		40-140	16		40
Benzo(ghi)perylene	69		60		40-140	14		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		76		23-120
2-Fluorobiphenyl	65		59		15-120
4-Terphenyl-d14	57		51		41-149

METALS

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-01
Client ID: TG06-MW01-1.5-2.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 10:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	128		mg/kg	4.45	0.239	2	04/23/24 10:00	04/24/24 21:57	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-02
Client ID: TG06-MW01-5.0-5.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 10:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	346		mg/kg	5.51	0.295	2	04/23/24 10:00	04/24/24 22:49	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-03
Client ID: TG06-MW01-5.5-6.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 11:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	336		mg/kg	6.08	0.326	2	04/23/24 10:00	04/24/24 22:53	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-05
Client ID: GPR270-15-3.0-3.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 12:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	394		mg/kg	5.52	0.296	2	04/23/24 10:00	04/24/24 22:58	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-06
Client ID: GPR270-16-3.5-4.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 11:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	235		mg/kg	5.51	0.296	2	04/23/24 10:00	04/24/24 23:02	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-11
Client ID: GPR1038-08-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 15:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	326		mg/kg	8.65	0.464	4	04/23/24 10:00	04/25/24 11:44	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-14
Client ID: GPR1038-09-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 15:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	552		mg/kg	4.84	0.260	2	04/23/24 10:00	04/24/24 23:11	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-17
Client ID: GPR1038-10-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 14:40
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	368		mg/kg	5.22	0.280	2	04/23/24 10:00	04/24/24 23:24	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Lab Number: L2421516
Project Number: 200.00135
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-20
Client ID: GPR1038-11-4.5-5.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 14:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	276		mg/kg	4.78	0.256	2	04/23/24 10:00	04/24/24 23:29	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-23
Client ID: GPR1038-12-2.5-3.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/18/24 16:10
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	554		mg/kg	5.10	0.273	2	04/23/24 10:00	04/24/24 23:33	EPA 3050B	1,6010D	JMF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-25
Client ID: FB-240418
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 04/18/24 14:20
Date Received: 04/18/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	04/22/24 22:09	04/25/24 14:48	EPA 3005A	1,6020B	EJF

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421516
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 25 Batch: WG1911729-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	04/22/24 22:09	04/24/24 11:34	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03,05-06,11,14,17,20,23 Batch: WG1911924-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	04/23/24 10:00	04/24/24 21:34	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 25 Batch: WG1911729-2								
Lead, Dissolved	101		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06,11,14,17,20,23 Batch: WG1911924-2								
Lead, Total	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 25 QC Batch ID: WG1911729-3 WG1911729-4 QC Sample: L2421367-04 Client ID: MS Sample												
Lead, Dissolved	ND	1060	1123	106		1129	106		75-125	1		20
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06,11,14,17,20,23 QC Batch ID: WG1911924-3 QC Sample: L2421516-01 Client ID: TG06-MW01-1.5-2.0												
Lead, Total	128	46.2	178	108		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03,05-06,11,14,17,20,23 QC Batch ID: WG1911924-4 QC Sample: L2421516-01 Client ID: TG06-MW01-1.5-2.0						
Lead, Total	128	182	mg/kg	**35**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-01
Client ID: TG06-MW01-1.5-2.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-02
Client ID: TG06-MW01-5.0-5.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.2		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-03
Client ID: TG06-MW01-5.5-6.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	64.0		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-05
Client ID: GPR270-15-3.0-3.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 12:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-06
Client ID: GPR270-16-3.5-4.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 11:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.7		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-07
Client ID: GPR270-17-1.5-2.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 09:50
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.6		%	0.100	NA	1	-	04/30/24 09:45	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-08
Client ID: GPR270-17-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 09:55
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.6		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-09
Client ID: GPR270-17-5.5-6.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 10:00
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.0		%	0.100	NA	1	-	04/30/24 09:45	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-11
Client ID: GPR1038-08-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 15:45
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-14
Client ID: GPR1038-09-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 15:15
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.1		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-17
Client ID: GPR1038-10-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 14:40
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.9		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-20
Client ID: GPR1038-11-4.5-5.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 14:05
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421516-23
Client ID: GPR1038-12-2.5-3.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/18/24 16:10
Date Received: 04/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.7		%	0.100	NA	1	-	04/19/24 13:16	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421516

Report Date: 05/06/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03,05-06,08,11,14,17,20,23 QC Batch ID: WG1910813-1 QC Sample: L2421516-01 Client ID: TG06-MW01-1.5-2.0						
Solids, Total	87.8	83.5	%	5		20
General Chemistry - Westborough Lab Associated sample(s): 07,09 QC Batch ID: WG1915008-1 QC Sample: L2420710-23 Client ID: DUP Sample						
Solids, Total	90.2	88.6	%	2		20

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421516-01A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-01B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-01C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-01D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-01F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2421516-02A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-02B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-02C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-02D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-02F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2421516-03A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-03B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-03C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-03D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-03F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2421516-04A	Vial MeOH preserved	A	NA		2.6	Y	Absent		HOLD-8260HLW(14)
L2421516-04B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	HOLD-8260HLW(14)
L2421516-04C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	HOLD-8260HLW(14)
L2421516-04D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-04E	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421516-04F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		HOLD-8270(14)
L2421516-05A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-05B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-05C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-05D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-05F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2421516-06A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-06B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-06C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-06D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-06F	Glass 120ml/4oz unpreserved	A	NA		2.6	Y	Absent		PA-PAH(14)
L2421516-06X	Vial MeOH preserved split	NA	NA			Y	Absent		PA-8260HLW(14)
L2421516-07A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-07B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-07C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-07D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-08A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-08B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-08C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-08D	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-09A	Vial MeOH preserved	A	NA		2.6	Y	Absent		PA-8260HLW(14)
L2421516-09B	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-09C	Vial water preserved	A	NA		2.6	Y	Absent	19-APR-24 12:10	PA-8260HLW(14)
L2421516-09D	Plastic 120ml unpreserved	A	NA		2.6	Y	Absent		TS(7)
L2421516-10A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-10B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421516-11A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-11B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-12A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-12B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-13A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-13B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-14A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-14B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-15A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-15B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-16A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-16B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-17A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-17B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-18A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-18B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-19A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-19B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-20A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-20B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-21A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-21B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-22A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-22B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)
L2421516-23A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		TS(7)
L2421516-23B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		PB-TI(180)
L2421516-24A	Plastic 2oz unpreserved for TS	A	NA		2.6	Y	Absent		HOLD-WETCHEM()
L2421516-24B	Glass 60mL/2oz unpreserved	A	NA		2.6	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421516
Report Date: 05/06/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421516-25A	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)
L2421516-25B	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)
L2421516-25C	Vial HCl preserved	A	NA		2.6	Y	Absent		PA-8260(14)
L2421516-25D	Vial Na2S2O3 preserved	A	NA		2.6	Y	Absent		8011(14)
L2421516-25E	Vial Na2S2O3 preserved	A	NA		2.6	Y	Absent		8011(14)
L2421516-25F	Plastic 250ml unpreserved	A	7	7	2.6	Y	Absent		-
L2421516-25G	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		PA-PAHSIM-LVI(7)
L2421516-25H	Amber 250ml unpreserved	A	7	7	2.6	Y	Absent		PA-PAHSIM-LVI(7)
L2421516-25X	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.6	Y	Absent		PB-6020S-PPB(180)
L2421516-26A	Vial Na2S2O3 preserved	A	NA		2.6	Y	Absent		HOLD-504/8011(14)
L2421516-26B	Vial Na2S2O3 preserved	A	NA		2.6	Y	Absent		HOLD-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY	**Lab Number:**	L2421516
Project Number:	200.00135	**Report Date:**	05/06/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 4/19/24

ALPHA Job #: L2421516

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PES Refinery
Project Location: Philadelphia, PA
Project #: 200.00135
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1,2,3 + Hg (from attached)	Benzene	Lead	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do; Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
2516-01	TG06-MW01-1.5-2.0	4/18/24	10:45	S	MD	X					6
-02	TG06-MW01-5.0-5.5		10:55			X					6
-03	TG06-MW01-5.5-6.0		11:05			X					6
-04	GPR270-15-0.5-1.0		12:05			H				Hold	6
-05	GPR270-15-3.0-3.5		12:15			X					6
-06	GPR270-16-3.5-4.0		11:50			X					6
-07	GPR270-17-1.5-2.0		9:50				H			Hold	4
-08	GPR270-17-2.0-2.5		9:55				X				4
-09	GPR270-17-5.5-6.0		10:00				H			Hold	4
-10	GPR1038-08-1.5-2.0	↓	15:40	↓	↓			H		Hold	2

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Mark Digi RAB	04/18/24 17:30	RAB 4-18 1740	
	4-18 1800		4/18/24 1800
Anthony Green	4/19/24 0115	Anthony Green APR 18 2024 2146	4/19/24 0115

Rel: 4/19/24 0315
4/19/24 0315

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 4/19/24

ALPHA Job #: L2421516

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PES Refinery
Project Location: Philadelphia, PA
Project #: 200.00135
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Analysis: Stat List 1-6 (5 as attached)	Benzene	Lead	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
2516-11	GPR1038-08-2.5-3.0	4/18/24	15:45	S	ND		X				2
-12	GPR1038-08-6.5-7.0		15:50				H			Hold	2
-13	GPR1038-09-1.5-2.0		15:10				H			Hold	2
-14	GPR1038-09-2.5-3.0		15:15				X				2
-15	GPR1038-09-6.5-7.0		15:30				H			Hold	2
-16	GPR1038-10-1.5-2.0		14:35				H			Hold	2
-17	GPR1038-10-4.5-5.0		14:40				X				2
-18	GPR1038-10-6.5-7.0		14:45				H			Hold	2
-19	GPR1038-11-1.0-1.5		14:00				H			Hold	2
-20	GPR1038-11-4.5-5.0	↓	14:05	↓	↓		X				2

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Ref: SGD 4/19/24 0315
4/19/24 0215

Container Type																				
Preservative																				

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] RMD	04/18/24 17:30	[signature] RMD	4-18 1740
[signature]	4-18 1800	[signature]	4/18/24 1800
Anthony Green	4/18/24 2110	Anthony Green	APR 18 2024 2110
Anthony Green	4/19/24 0115	[signature]	4/19/24 0115

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 4/19/24

ALPHA Job #: L2421516

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

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Project Manager: William Schmidt
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Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Short List 1-6 (5 cm unfiltered)	Benzene	Lead	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
21516-21	GPR1038-11-6.5-7.0	4/18/24	14:10	S	MD			H		Hold	2
-22	GPR1038-12-1.0-1.5		16:05					H		Hold	2
-23	GPR1038-12-2.5-3.0		16:10					X			2
-24	GPR1038-12-4.5-5.0		16:45					H		Hold	2
-25	FB-240418		14:20	Blank		X	X	X			8
-26	Trip Blank	3/13/24		Blank		X	X	X			2

Rel: 4/19/24 0315
4/19/24 0315

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	04/18/24 17:30		
RMB	4/18 1800	RMB	4/18 1746
Anthony Green	4/18/24 2100	Anthony Green	4/18/24 1800
Anthony Green	4/19/24 0115		4/19/24 0115

APR 18 2024

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

Table 1
Site Characterization Soil Sampling
Tank Group 06
Philadelphia Energy Solutions Refining and Marketing LLC, Philadelphia, PA

Notes:
1. Proposed to ensure full coverage around the AST
2. Proposed for horizontal delineation
3. Proposed for vertical delineation

Abbreviations:
bgs – Below Ground Surface
WT – Water Table

Short List 3-6

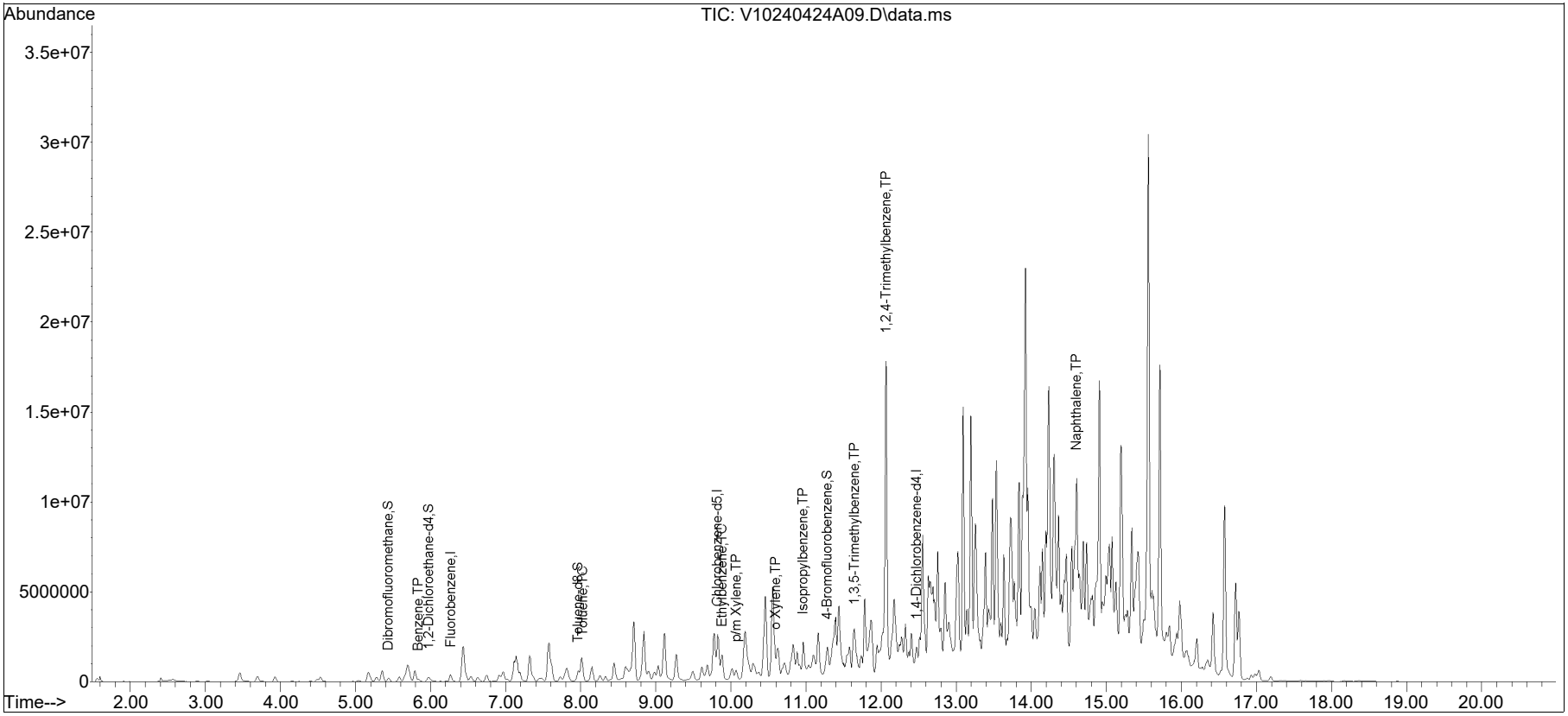
Benzene	Anthracene
Cumene	Benzo(a)anthracene
1,2-Dibromoethane	Benzo(a)pyrene
1,2-Dichloroethane	Benzo(b)fluoranthene
Ethyl Benzene	Benzo(g,h,i)perylene
Toluene	Chrysene
1,2,4-Trimethylbenzene	Fluorene
1,3,5-Trimethylbenzene	Indeno(1,2,3-cd)pyrene
Methyl tert-butyl ether	Naphthalene
Xylenes (total)	Phenanthrene
	Pyrene
	Lead

Quantitation Report (QT Reviewed)

Data Path : K:\VOA110\2024\240424A\
Data File : V10240424A09.D
Acq On : 24 Apr 2024 10:52 am
Operator : VOA110:JIC
Sample : l2421516-01,31h,6.64,5,0.100,,a
Misc : WG1913191,ICAL20673
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 25 06:30:14 2024
Quant Method : K:\VOA110\2024\240424A\V110_231214N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 15 08:40:25 2023
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list424A01.D•



ANALYTICAL REPORT

Lab Number:	L2421792
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY
Project Number:	200.00135
Report Date:	05/06/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2421792-01	GPR217-01-SS01	SOIL	PHILADELPHIA, PA	04/19/24 13:35	04/19/24
L2421792-02	GPR217-02-SS01	SOIL	PHILADELPHIA, PA	04/19/24 13:50	04/19/24
L2421792-03	GPR217-03-SS01	SOIL	PHILADELPHIA, PA	04/19/24 13:20	04/19/24
L2421792-04	GPR217-06-SS01	SOIL	PHILADELPHIA, PA	04/19/24 13:05	04/19/24
L2421792-05	GPR217-08-SS01	SOIL	PHILADELPHIA, PA	04/19/24 12:50	04/19/24
L2421792-06	GPR217-09-SS01	SOIL	PHILADELPHIA, PA	04/19/24 12:15	04/19/24
L2421792-07	GPR217-10-SS01	SOIL	PHILADELPHIA, PA	04/19/24 12:00	04/19/24
L2421792-08	GPR270-18-0.5-1.0	SOIL	PHILADELPHIA, PA	04/19/24 10:40	04/19/24
L2421792-09	GPR270-18-2.0-2.5	SOIL	PHILADELPHIA, PA	04/19/24 10:50	04/19/24
L2421792-10	GPR270-18-6.5-7.0	SOIL	PHILADELPHIA, PA	04/19/24 11:00	04/19/24
L2421792-11	GPR270-19-1.0-1.5	SOIL	PHILADELPHIA, PA	04/19/24 09:45	04/19/24
L2421792-12	GPR270-19-2.0-2.5	SOIL	PHILADELPHIA, PA	04/19/24 09:55	04/19/24
L2421792-13	GPR270-19-6.5-7.0	SOIL	PHILADELPHIA, PA	04/19/24 10:05	04/19/24
L2421792-14	FB-240419	WATER	PHILADELPHIA, PA	04/19/24 11:30	04/19/24
L2421792-15	TB-240419	WATER	PHILADELPHIA, PA	04/19/24 00:00	04/19/24

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

Case Narrative (continued)

Report Submission

May 06, 2024: This final report includes the results of the following analyses:

L2421792-08, -10, -11, and -13: Volatile Organics

April 26, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2421792-15: The Client ID was specified by the client.

Volatile Organics

L2421792-01: The surrogate recovery is outside the method acceptance criteria for 4-bromofluorobenzene (157%) due to interference with the Internal Standard.

L2421792-01: One or more of the internal standard recoveries is outside the acceptance criteria; however, the internal standard is within criteria for the target compounds; therefore, the results are reported.

L2421792-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (676%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2421792-04: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (136%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2421792-04: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2421792-05: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (273%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

Case Narrative (continued)

L2421792-08: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (193%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2421792-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (249%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2421792-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (237%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2421792-12: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (175%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 05/06/24

ORGANICS

VOLATILES

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-01
Client ID: GPR217-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 13:35
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 15:52
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00096		mg/kg	0.00068	0.00023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**157**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-02
Client ID: GPR217-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 13:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 16:19
Analyst: JIC
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00092		mg/kg	0.00088	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	125		70-130
4-Bromofluorobenzene	**676**	Q	70-130
Dibromofluoromethane	84		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-03
Client ID: GPR217-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 13:20
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 15:25
Analyst: JIC
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00058	0.00019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-04
Client ID: GPR217-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 13:05
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 18:36
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.025	J	mg/kg	0.029	0.0096	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	102		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-05
Client ID: GPR217-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 12:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 16:47
Analyst: JIC
Percent Solids: 61%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00025	J	mg/kg	0.00072	0.00024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	77		70-130
4-Bromofluorobenzene	**273**	Q	70-130
Dibromofluoromethane	121		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-06
Client ID: GPR217-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 12:15
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 14:04
Analyst: JIC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.00090		mg/kg	0.00063	0.00021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	73		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-07
Client ID: GPR217-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 12:00
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 14:31
Analyst: JIC
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00055	0.00018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-08
Client ID: GPR270-18-0.5-1.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 10:40
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 05/02/24 12:41
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	0.029		mg/kg	0.00048	0.00016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**193**	Q	70-130
Dibromofluoromethane	86		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-09
Client ID: GPR270-18-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 10:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 14:58
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00049	0.00016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	109		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-10
Client ID: GPR270-18-6.5-7.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 11:00
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 05/02/24 13:07
Analyst: JIC
Percent Solids: 64%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00088	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**249**	Q	70-130
Dibromofluoromethane	94		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-11
Client ID: GPR270-19-1.0-1.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 09:45
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 05/02/24 13:33
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.43		mg/kg	0.029	0.0096	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**237**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-12
Client ID: GPR270-19-2.0-2.5
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 09:55
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 04/25/24 18:09
Analyst: JIC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.69		mg/kg	0.026	0.0087	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	**175**	Q	70-130
Dibromofluoromethane	94		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-13
Client ID: GPR270-19-6.5-7.0
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 10:05
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 05/02/24 12:15
Analyst: JIC
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Benzene	ND		mg/kg	0.00064	0.00021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	97		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-14
Client ID: FB-240419
Sample Location: PHILADELPHIA, PA
Date Collected: 04/19/24 11:30
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/24/24 17:10
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	106		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-15
Client ID: TB-240419
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 00:00
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 04/24/24 17:35
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	105		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/24/24 09:25
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 14-15 Batch: WG1913264-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	109		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/25/24 11:21
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,12 Batch: WG1913321-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 04/25/24 11:21
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,05-07,09 Batch: WG1913798-5					
Benzene	ND		mg/kg	0.00050	0.00017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	108		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 05/02/24 09:39
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08,10,13 Batch: WG1916320-5					
Benzene	ND		mg/kg	0.00050	0.00017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	94		70-130

Project Name: PES REFINERY
Project Number: 200.00135
Lab Number: L2421792
Report Date: 05/06/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 05/02/24 09:39
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 11 Batch: WG1916733-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 14-15 Batch: WG1913264-3 WG1913264-4								
Benzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	95		94		70-130
4-Bromofluorobenzene	91		92		70-130
Dibromofluoromethane	102		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,12 Batch: WG1913321-3 WG1913321-4								
Benzene	90		88		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		89		70-130
Toluene-d8	91		90		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	106		122		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,05-07,09 Batch: WG1913798-3 WG1913798-4								
Benzene	90		88		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		89		70-130
Toluene-d8	91		90		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	106		122		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08,10,13 Batch: WG1916320-3 WG1916320-4								
Benzene	94		93		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		95		70-130
Toluene-d8	95		94		70-130
4-Bromofluorobenzene	93		95		70-130
Dibromofluoromethane	85		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 11 Batch: WG1916733-3 WG1916733-4								
Benzene	94		93		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		95		70-130
Toluene-d8	95		94		70-130
4-Bromofluorobenzene	93		95		70-130
Dibromofluoromethane	85		98		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-01
Client ID: GPR217-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 13:35
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-02
Client ID: GPR217-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 13:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.0		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-03
Client ID: GPR217-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 13:20
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.5		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-04
Client ID: GPR217-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 13:05
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-05
Client ID: GPR217-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 12:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	61.2		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-06
Client ID: GPR217-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 12:15
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.2		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-07
Client ID: GPR217-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 12:00
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.1		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-08
Client ID: GPR270-18-0.5-1.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 10:40
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	04/30/24 10:37	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-09
Client ID: GPR270-18-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 10:50
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.4		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-10
Client ID: GPR270-18-6.5-7.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 11:00
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.5		%	0.100	NA	1	-	04/30/24 10:37	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-11
Client ID: GPR270-19-1.0-1.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 09:45
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	04/30/24 10:37	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-12
Client ID: GPR270-19-2.0-2.5
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 09:55
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.4		%	0.100	NA	1	-	04/20/24 13:41	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

SAMPLE RESULTS

Lab ID: L2421792-13
Client ID: GPR270-19-6.5-7.0
Sample Location: PHILADELPHIA, PA

Date Collected: 04/19/24 10:05
Date Received: 04/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.6		%	0.100	NA	1	-	04/30/24 10:37	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135

Lab Number: L2421792

Report Date: 05/06/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07,09,12 QC Batch ID: WG1911147-1 QC Sample: L2421776-01 Client ID: DUP Sample						
Solids, Total	95.2	95.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 08,10-11,13 QC Batch ID: WG1915009-1 QC Sample: L2423295-01 Client ID: DUP Sample						
Solids, Total	81.2	79.4	%	2		20

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421792-01A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-01B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-01C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-01D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-02A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-02B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-02C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-02D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-03A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-03B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-03C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-03D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-04A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-04B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-04C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-04D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-05A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-05B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-05C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-05D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-06A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-06B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-06C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421792-06D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-07A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-07B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-07C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-07D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-08A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-08B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-08C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-08D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-08E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)
L2421792-08F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-09A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-09B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-09C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-09D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-09E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)
L2421792-09F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-10A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-10B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-10C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-10D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-10E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)
L2421792-10F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-11A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-11B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-11C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-11D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-11E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421792-11F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-12A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-12B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-12C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-12D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-12E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)
L2421792-12F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-13A	Vial MeOH preserved	A	NA		3.0	Y	Absent		PA-8260HLW(14)
L2421792-13B	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-13C	Vial water preserved	A	NA		3.0	Y	Absent	20-APR-24 09:30	PA-8260HLW(14)
L2421792-13D	Plastic 120ml unpreserved	A	NA		3.0	Y	Absent		TS(7)
L2421792-13E	Glass 60mL/2oz unpreserved	A	NA		3.0	Y	Absent		HOLD-METAL(180)
L2421792-13F	Glass 120ml/4oz unpreserved	A	NA		3.0	Y	Absent		HOLD-8270(14)
L2421792-14A	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14B	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14C	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14D	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14E	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14F	Vial HCl preserved	A	NA		3.0	Y	Absent		PA-8260(14)
L2421792-14G	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		HOLD-504/8011(14)
L2421792-14H	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		HOLD-504/8011(14)
L2421792-14I	Plastic 250ml unpreserved	A	7	7	3.0	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2421792-14J	Plastic 250ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		HOLD-METAL-TOTAL(180)
L2421792-14K	Amber 250ml unpreserved	A	7	7	3.0	Y	Absent		HOLD-8270(7)
L2421792-14L	Amber 250ml unpreserved	A	7	7	3.0	Y	Absent		HOLD-8270(7)
L2421792-14M	Amber 250ml unpreserved	A	7	7	3.0	Y	Absent		HOLD-8270(7)
L2421792-14N	Amber 250ml unpreserved	A	7	7	3.0	Y	Absent		HOLD-8270(7)
L2421792-14X	Plastic 120ml HNO3 preserved Filtrates	A	NA		3.0	Y	Absent		HOLD-METAL-DISSOLVED(180)

*Values in parentheses indicate holding time in days

Project Name: PES REFINERY
Project Number: 200.00135

Lab Number: L2421792
Report Date: 05/06/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2421792-15A	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		PA-8260(7)
L2421792-15B	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		PA-8260(7)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY	**Lab Number:**	L2421792
Project Number:	200.00135	**Report Date:**	05/06/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/20/24

ALPHA Job #: L2421792

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ransomenv.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PES Refinery
Project Location: Philadelphia, PA
Project #: 200.00135
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: Shorter List (see attached) / Benzene / Lead

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Shorter List (see attached)	Benzene	Lead	Sample Specific Comments	TOTAL # BOTTLES
21792-01	GPR217-01-5501	04/19/24	13:35	S	ND	X				3
-02	GPR217-02-5501		13:50			X				3
-03	GPR217-03-5501		13:20			X				3
-04	GPR217-04-5501		13:05			X				3
-05	GPR217-05-5501		12:50			X				3
-06	GPR217-09-5501		12:15			X				3
-07	GPR217-10-5501		12:00			X				3
-08	GPR270-18-0.5-1.0		10:40			H			Hold	6
-09	GPR270-18-2.5-2.5		10:50			X				6
-10	GPR270-18-6.5-7.0		11:00			H			Hold	6

Container Type										
Preservative										

Relinquished By:	Date/Time	Received By:	Date/Time
	04/19/24 15:20		4/19/24 15:20
	4/19/24 1800		4/19/24 1800
	4/19/24 2200		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/20/24

ALPHA Job #: L2421792

Client Information

Client: Ramboll Consulting LLC
Address: 2127 Hamilton Avenue
Hamilton, NJ 08619
Phone: 609-584-0090
Fax:
Email: william.schmidt@ramboll.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: PES Refinery
Project Location: Philadelphia, PA
Project #: 200, 0135
Project Manager: William Schmidt
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☑ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: Short List 46 (see attached) Benzene Lead

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials		Sample Specific Comments	TOTAL # BOTTLES
21792-11	GPR270-19-1.0-1.5	04/19/24	9:45	S	ND	H	Hold	6
-12	GPR270-19-2.0-2.5		9:55			X		6
-13	GPR270-19-6.5-7.0		10:05			H	Hold	6
-14	FB-240419		11:30	Water		X		
-15	Trip Blank	4/12/24		Water		X		

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	04/19/24 15:20		4/19/24 1520
	4/19/24 1800		4/19/24 1800
	4/19/24 2000		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

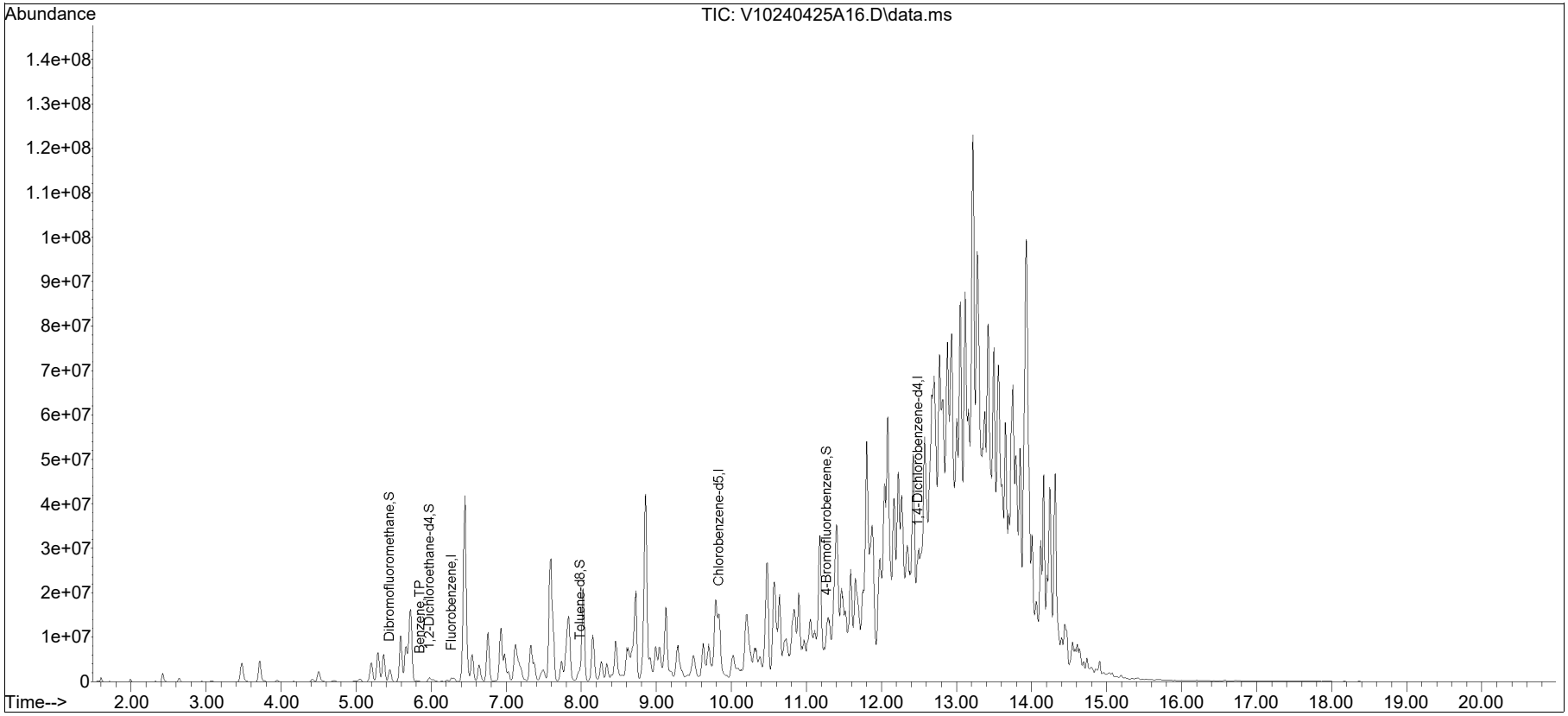
FORM NO: 01-01 (rev. 14-OCT-07)

Quantitation Report (QT Reviewed)

Data Path : K:\VOA110\2024\240425A\
Data File : V10240425A16.D
Acq On : 25 Apr 2024 4:19 pm
Operator : VOA110:JIC
Sample : l2421792-02,31,4.99,5,,b
Misc : WG1913798,ICAL20673
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 26 11:13:15 2024
Quant Method : K:\VOA110\2024\240425A\V110_231214N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 15 08:40:25 2023
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV10240425A01.D•

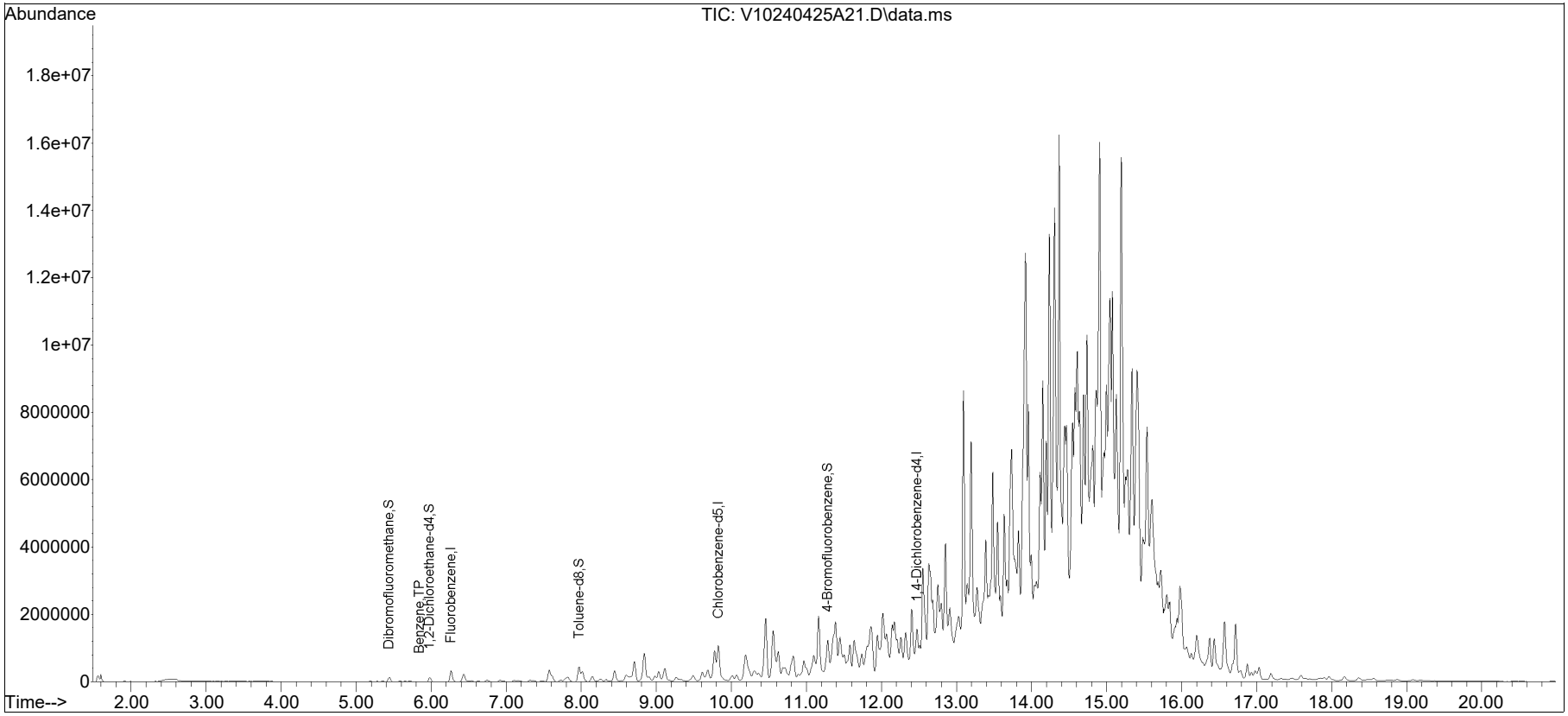


Quantitation Report (QT Reviewed)

Data Path : K:\VOA110\2024\240425A\
Data File : V10240425A21.D
Acq On : 25 Apr 2024 6:36 pm
Operator : VOA110:JIC
Sample : l2421792-04,31h,5.76,5,0.100,,a
Misc : WG1913321,ICAL20673
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 26 07:52:44 2024
Quant Method : K:\VOA110\2024\240425A\V110_231214N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 15 08:40:25 2023
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV10240425A01.D•

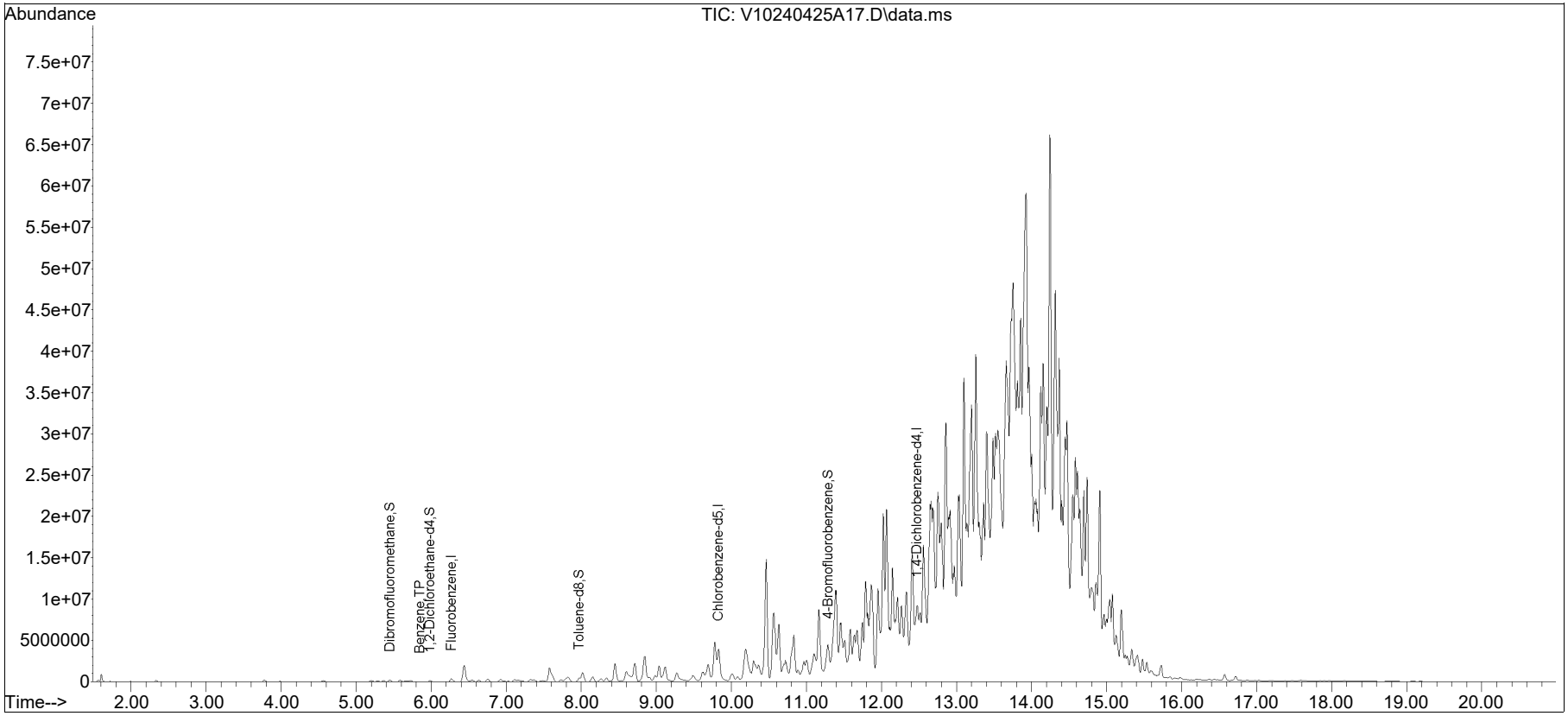


Quantitation Report (QT Reviewed)

Data Path : K:\VOA110\2024\240425A\
Data File : V10240425A17.D
Acq On : 25 Apr 2024 4:47 pm
Operator : VOA110:JIC
Sample : l2421792-05,31,5.66,5,,b
Misc : WG1913798,ICAL20673
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 26 07:52:29 2024
Quant Method : K:\VOA110\2024\240425A\V110_231214N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 15 08:40:25 2023
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV10240425A01.D•

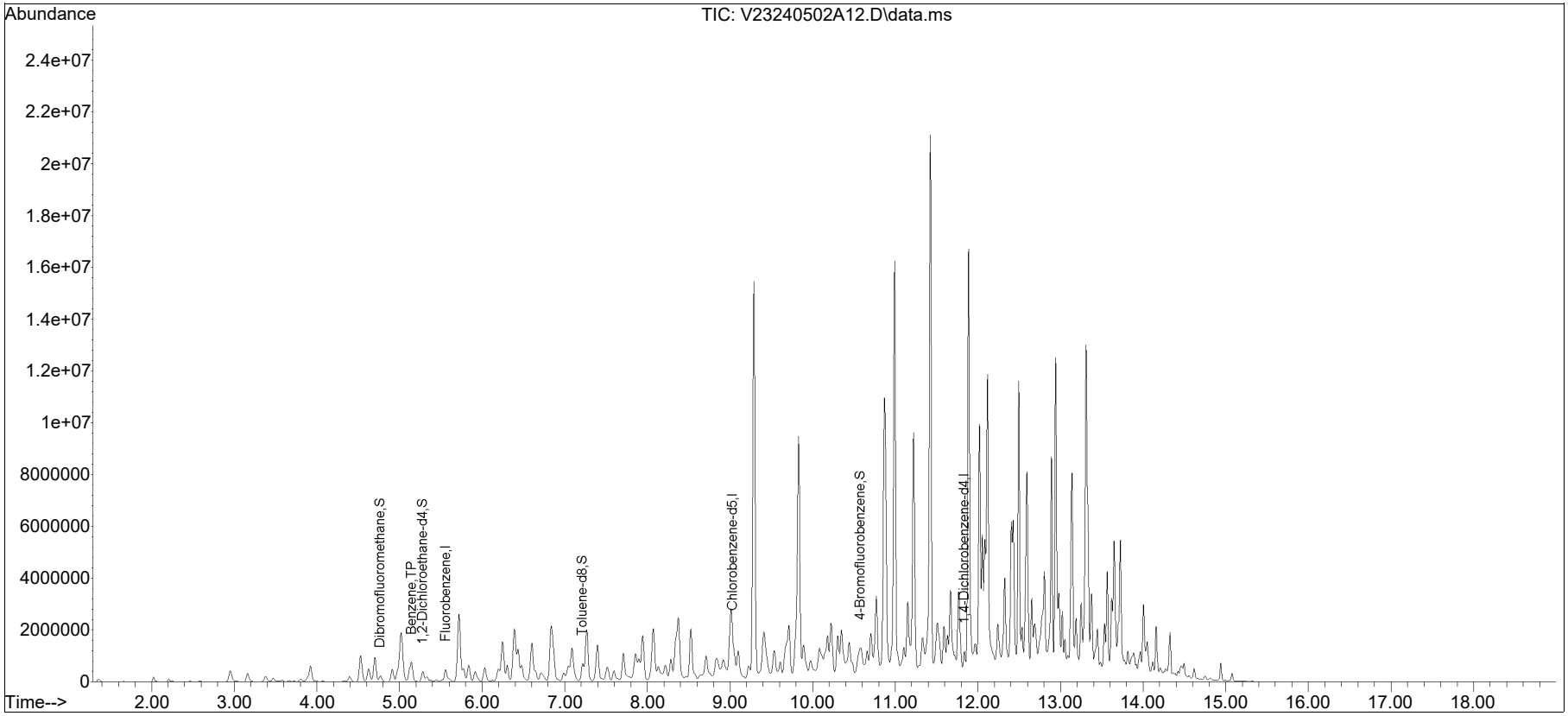


Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2024\240502A\
Data File : V23240502A12.D
Acq On : 02 May 2024 12:41 pm
Operator : VOA123:JIC
Sample : L2421792-08,31,6.11,5,,B
Misc : WG1916320,ICAL20839
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 02 13:55:19 2024
Quant Method : K:\VOA123\2024\240502A\V123_240207N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Feb 08 11:15:00 2024
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV23240502A02.D•

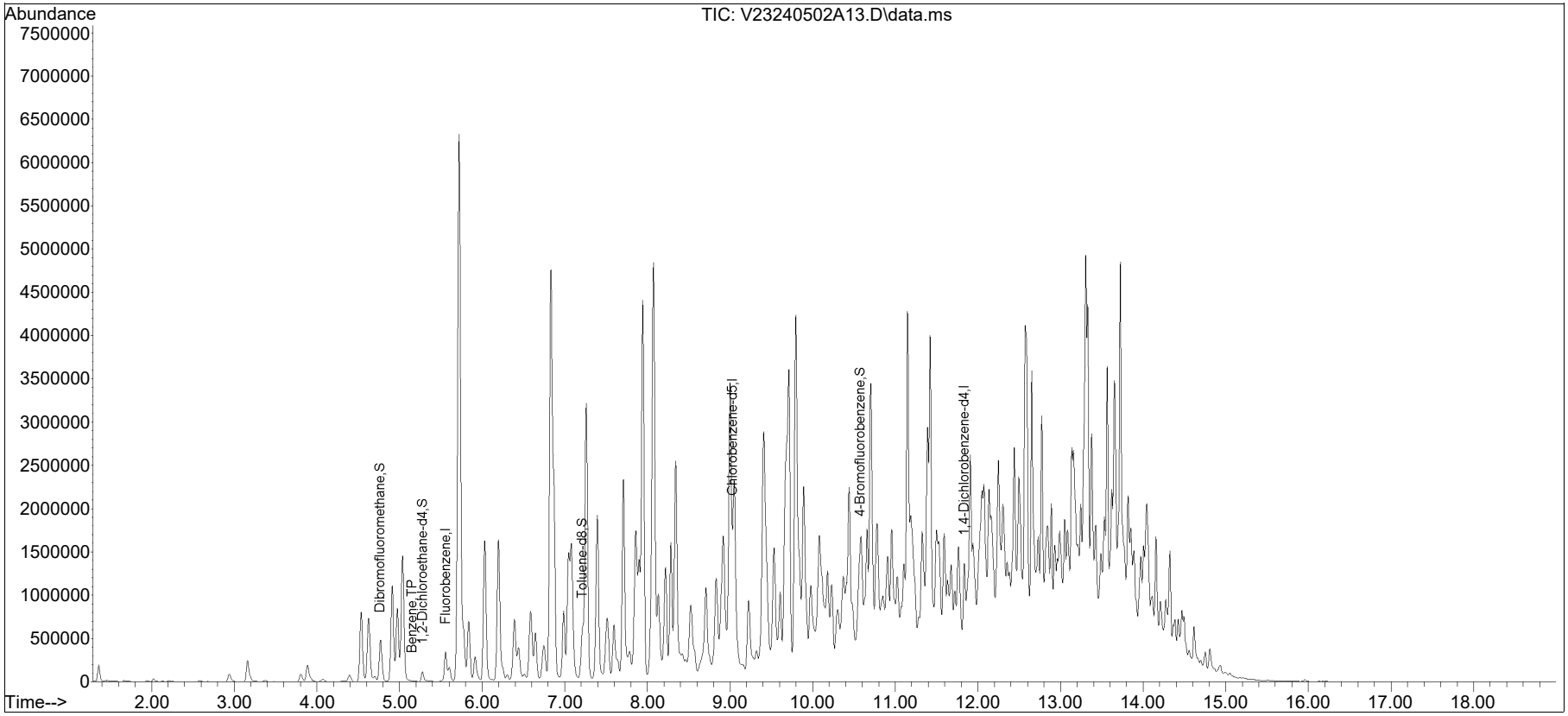


Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2024\240502A\
Data File : V23240502A13.D
Acq On : 02 May 2024 01:07 pm
Operator : VOA123:JIC
Sample : L2421792-10,31,4.47,5,,B
Misc : WG1916320,ICAL20839
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 02 13:55:23 2024
Quant Method : K:\VOA123\2024\240502A\V123_240207N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Feb 08 11:15:00 2024
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV23240502A02.D•

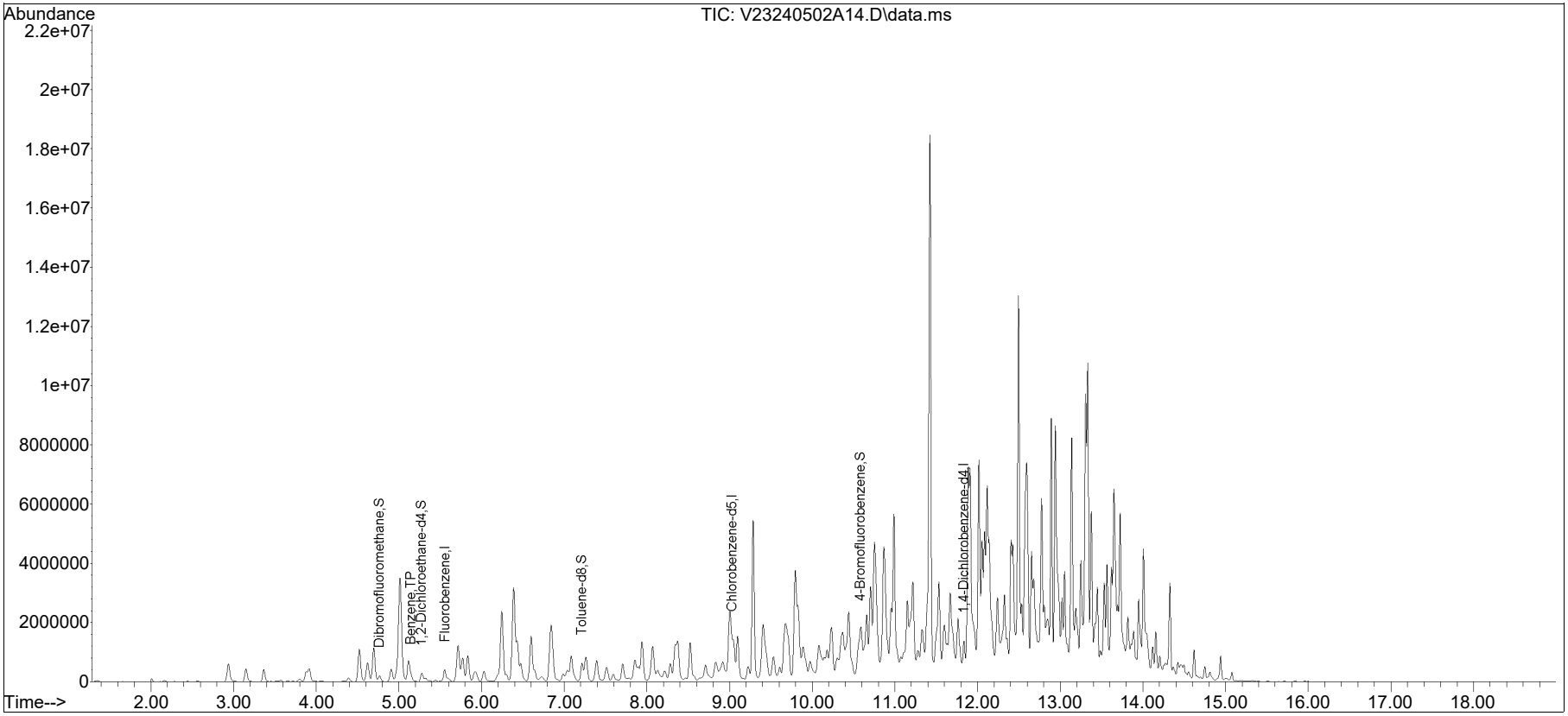


Quantitation Report (QT Reviewed)

Data Path : K:\VOA123\2024\240502A\
Data File : V23240502A14.D
Acq On : 02 May 2024 01:33 pm
Operator : VOA123:JIC
Sample : L2421792-11,31H,5.75,5,0.100,,A
Misc : WG1916733,ICAL20839
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 02 13:55:27 2024
Quant Method : K:\VOA123\2024\240502A\V123_240207N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Feb 08 11:15:00 2024
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV23240502A02.D•

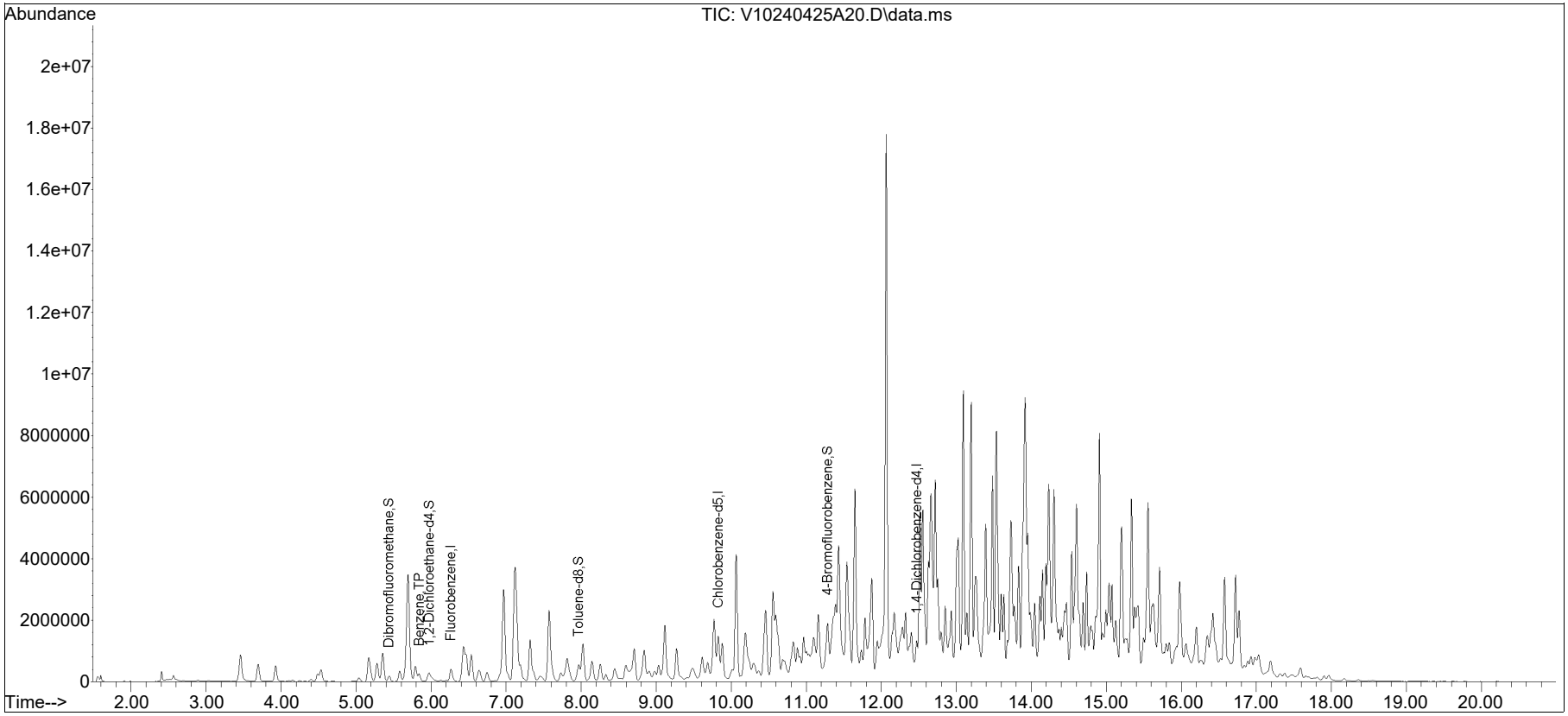


Quantitation Report (QT Reviewed)

Data Path : K:\VOA110\2024\240425A\
Data File : V10240425A20.D
Acq On : 25 Apr 2024 6:09 pm
Operator : VOA110:JIC
Sample : l2421792-12,31h,6.18,5,0.100,,a
Misc : WG1913321,ICAL20673
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 26 07:52:40 2024
Quant Method : K:\VOA110\2024\240425A\V110_231214N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Dec 15 08:40:25 2023
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene onlyV10240425A01.D•



ANALYTICAL REPORT

Lab Number:	L2440937
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PES REFINERY
Project Number:	200.00135.025
Report Date:	07/26/24

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2440937-01	GPR-1101-10-2.5-3	SOIL	PHILADELPHIA	07/19/24 10:30	07/19/24
L2440937-02	GPR-1101-10-3.5-4	SOIL	PHILADELPHIA	07/19/24 10:40	07/19/24
L2440937-03	GPR-1101-10-8-8.5	SOIL	PHILADELPHIA	07/19/24 10:50	07/19/24
L2440937-04	GPR-1101-09-1.5-2	SOIL	PHILADELPHIA	07/19/24 11:10	07/19/24
L2440937-05	GPR-1101-09-3.5-4	SOIL	PHILADELPHIA	07/19/24 11:20	07/19/24
L2440937-06	GPR-1101-09-8.5-9	SOIL	PHILADELPHIA	07/19/24 11:30	07/19/24

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

NJ DEP Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (4 ± 2° C)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	YES
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	YES
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

Case Narrative (continued)

Report Submission

July 26, 2024: This final report includes the results of all requested analyses.

July 25, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Total Metals

L2440937-02 and -05: The sample has an elevated detection limit due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 07/26/24

METALS

Project Name: PES REFINERY
Project Number: 200.00135.025
Lab Number: L2440937
Report Date: 07/26/24

SAMPLE RESULTS

Lab ID: L2440937-02
Client ID: GPR-1101-10-3.5-4
Sample Location: PHILADELPHIA
Date Collected: 07/19/24 10:40
Date Received: 07/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 58%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	371		mg/kg	6.46	0.346	2	07/24/24 00:06	07/25/24 12:03	EPA 3050B	1,6010D	DHL

Project Name: PES REFINERY
Project Number: 200.00135.025
Lab Number: L2440937
Report Date: 07/26/24

SAMPLE RESULTS

Lab ID: L2440937-05
Client ID: GPR-1101-09-3.5-4
Sample Location: PHILADELPHIA
Date Collected: 07/19/24 11:20
Date Received: 07/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	142		mg/kg	8.55	0.458	4	07/24/24 00:06	07/25/24 13:10	EPA 3050B	1,6010D	DHL

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,05 Batch: WG1950489-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	07/24/24 00:06	07/25/24 10:46	1,6010D	DHL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PES REFINERY

Project Number: 200.00135.025

Lab Number: L2440937

Report Date: 07/26/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,05 Batch: WG1950489-2								
Lead, Total	103		-		80-120	-		

INORGANICS
&
MISCELLANEOUS

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

SAMPLE RESULTS

Lab ID: L2440937-02
Client ID: GPR-1101-10-3.5-4
Sample Location: PHILADELPHIA

Date Collected: 07/19/24 10:40
Date Received: 07/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.3		%	0.100	NA	1	-	07/23/24 10:53	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

SAMPLE RESULTS

Lab ID: L2440937-05
Client ID: GPR-1101-09-3.5-4
Sample Location: PHILADELPHIA

Date Collected: 07/19/24 11:20
Date Received: 07/19/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.6		%	0.100	NA	1	-	07/23/24 10:53	121,2540G	ROI

Project Name: PES REFINERY
Project Number: 200.00135.025

Lab Number: L2440937
Report Date: 07/26/24

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2440937-01A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2440937-01B	Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)
L2440937-02A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2440937-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2440937-03A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2440937-03B	Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)
L2440937-04A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2440937-04B	Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)
L2440937-05A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		TS(7)
L2440937-05B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		PB-TI(180)
L2440937-06A	Plastic 2oz unpreserved for TS	A	NA		3.9	Y	Absent		HOLD-WETCHEM()
L2440937-06B	Glass 60mL/2oz unpreserved	A	NA		3.9	Y	Absent		HOLD-METAL(180)

*Values in parentheses indicate holding time in days

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PES REFINERY	**Lab Number:**	L2440937
Project Number:	200.00135.025	**Report Date:**	07/26/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2440937 02AUG24
HILCOGLOBAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 7/20/24

Project Information
Project Name: PES Refinery
Project Location: Philadelphia
Project #: 208.00135.025
(Use Project name as Project #) ☐
Project Manager: Bill Schmidt
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☑ NJ Full / Reduced PA
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Client Information
Client: Hansen Corp. LLC
Address: 2127 Hamilton Ave
Hamilton NJ
Phone: 609 584 0090
Fax:
Email: William.Schmidt@Greenman.com

Regulatory Requirement
☑ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Kmd	Total Bottles	Sample Specific Comments
40957 -01	~~Bad~~ GPR1101-10-2.5-3	7/19/24	1050	S	CO	H	2	
-02	GPR1101-10-3.5-4	"	1040	"	"	✓	2	
-03	GPR1101-10-8-8.5	"	1050	"	"	H	2	
-04	GPR1101-09-1.5-2	"	1110	"	"	H	2	
-05	GPR1101-09-3.5-4	"	1120	"	"	✓	2	
-06	GPR1101-09-8.5-9	"	1130	"	"	H	2	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: P/G
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
	7/19/24	James Dally	7/19/24 1649
James Dally	7/19/24 2105	Anthony Green	JUL 19 2024 2114
Anthony Green	7/20/24 0315		7/20/24 0400
			7/20/24 035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2300359
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	01/20/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300359
Report Date: 01/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300359-01	TG07-MW-06-230104	OIL	3144 W PASSYUNK AVE.	01/04/23 10:10	01/04/23
L2300359-02	TG07-MW-07-230104	OIL	3144 W PASSYUNK AVE.	01/04/23 09:50	01/04/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2300359-02: All analyses were cancelled at the client's request.

PIANO Volatile Organics

L2300359-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Saturated Hydrocarbons

L2300359-01: The sample was extracted and then analyzed using a gas chromatograph equipped with a flame ionization detector (GC/FID). The temperature program and associated experimental conditions were optimized to obtain maximum resolution in an eighty minute chromatographic run representative of hydrocarbons in the n-Octane (C8) to n-Tetracontane (C40) range. Qualitative evaluation of the sample was conducted by reviewing the sample chromatogram in conjunction with a chromatogram of a normal alkane series generated with the same chromatographic conditions. Chromatograms of hydrocarbon reference materials obtained from our library of 82 reference standards were also utilized to provide the best possible sample match. Quantitative determination of the sample's hydrocarbon concentration was performed in accordance with EPA Method 8015M. The sample's total hydrocarbon concentration and all associated quality control data are included in the report.

The following qualitative information is based on a tentative interpretation of chromatographic pattern recognition and boiling point ranges:

Total Petroleum Hydrocarbon Identification

L2300359-01 contains hydrocarbons eluting in the range of n-Octane (C8) to after the elution of n-Tetracontane (C40). Based on the data generated, L2300359-01 contains a combination of materials eluting in

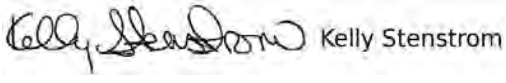
Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

Case Narrative (continued)

the low, mid, and heavy weight ranges of the chromatogram. The first material consists of individual resolved peaks eluting in the range of n-Octane (C8) to n-Hexadecane (C16) and is not a chromatographic match to any petroleum reference standard contained in the reference library; therefore, a qualitative identification could not be made. The second material contains an unresolved complex mixture (UCM) eluting between n-Heptacosane (C27) and n-Dotriacontane (C32) and is not a chromatographic match to any petroleum reference standard contained in the reference library; therefore, a qualitative identification could not be made. The third material is a mixture of unresolved peaks eluting in the low to mid weight range from n-Octane (C8) to n-Heneicosane (C21). It is similar to a weathered fuel, eluting in the Kerosene/Fuel Oil #1 range of the chromatogram. In an analysis of an undegraded product the n-alkanes are typically the dominant constituents, as seen in the petroleum reference chromatogram. As the product deteriorates, the n-alkanes are preferentially degraded, leaving behind other constituents such as isoprenoids. The analytical testing of the sample identified a pattern of isoprenoids. The level of alkanes and their ratios to the isoprenoids present indicates that the fuel oil has undergone degradation.

The WG1732624-1 Method Blank, associated with L2300359-01, has a concentration above the reporting limit for Total Petroleum Hydrocarbons (C9-C44). Since the associated sample concentration is greater than 10x the blank concentration for this target analyte, no corrective action is required.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 01/20/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 D
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8260D
Analytical Date: 01/10/23 18:31
Analyst: RAY
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	504	74.8	50
Isopentane	2750		mg/kg	504	92.1	50
1-Pentene	ND		mg/kg	504	91.9	50
2-Methyl-1-Butene	ND		mg/kg	504	78.3	50
Pentane	7740		mg/kg	504	157.	50
trans-2-Pentene	ND		mg/kg	504	68.0	50
Isoprene	ND		mg/kg	504	89.9	50
cis-2-Pentene	ND		mg/kg	504	81.1	50
Tertiary Butanol	ND		mg/kg	6290	816.	50
2,2-Dimethylbutane	447	J	mg/kg	504	155.	50
4-Methyl-1-pentene	ND		mg/kg	504	78.3	50
Cyclopentane	383	J	mg/kg	504	131.	50
2,3-Dimethylbutane	898		mg/kg	504	208.	50
2-Methylpentane	5770		mg/kg	504	136.	50
Methyl tert butyl ether	ND		mg/kg	504	104.	50
3-Methylpentane	3760		mg/kg	504	79.8	50
1-Hexene	ND		mg/kg	504	70.7	50
n-Hexane	23000		mg/kg	504	82.8	50
Isopropyl Ether	ND		mg/kg	504	60.9	50
trans-2-Hexene	ND		mg/kg	504	65.7	50
2-Methyl-2-pentene	ND		mg/kg	504	77.0	50
cis-2-Hexene	ND		mg/kg	504	68.2	50
Ethyl-Tert-Butyl-Ether	ND		mg/kg	504	76.3	50
2,2-Dimethylpentane	282	J	mg/kg	504	67.7	50
Methylcyclopentane	3130		mg/kg	504	67.5	50
2,4-Dimethylpentane	530		mg/kg	504	62.2	50
2,2,3-Trimethylbutane	101	J	mg/kg	504	68.0	50
1,2-Dichloroethane	ND		mg/kg	504	74.3	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 D
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	217	J	mg/kg	504	93.6	50
Cyclohexane	4510		mg/kg	504	62.2	50
2-Methylhexane	5980		mg/kg	504	79.3	50
Benzene	134	J	mg/kg	504	76.8	50
2,3-Dimethylpentane	1130		mg/kg	504	66.7	50
Thiophene	ND		mg/kg	504	71.5	50
1,1-Dimethylcyclopentane	ND		mg/kg	504	60.4	50
3-Methylhexane	5210		mg/kg	504	80.6	50
Tertiary-Amyl Methyl Ether	ND		mg/kg	504	61.9	50
1,3-Dimethylcyclopentane (cis)	1340		mg/kg	504	75.8	50
3-Ethylpentane	375	J	mg/kg	504	72.8	50
1-Heptene/1,2-DMCP (trans)	2040		mg/kg	1010	147.	50
Isooctane	ND		mg/kg	504	54.9	50
trans-3-Heptene	ND		mg/kg	504	78.3	50
Heptane	45600		mg/kg	504	87.6	50
trans-2-Heptene	ND		mg/kg	504	64.4	50
cis-2-Heptene	ND		mg/kg	504	97.4	50
2,2-Dimethylhexane	ND		mg/kg	504	73.0	50
Methylcyclohexane	12600		mg/kg	504	68.0	50
2,5-Dimethylhexane	594		mg/kg	504	87.6	50
2,4-Dimethylhexane	656		mg/kg	504	61.2	50
Ethylcyclopentane	626		mg/kg	504	66.7	50
2,2,3-Trimethylpentane	ND		mg/kg	504	87.4	50
2,3,4-Trimethylpentane	ND		mg/kg	504	65.7	50
2,3,3-Trimethylpentane	ND		mg/kg	504	99.9	50
2,3-Dimethylhexane	523		mg/kg	504	122.	50
2-Methylheptane	6320		mg/kg	504	85.1	50
4-Methylheptane	1780		mg/kg	504	86.6	50
3-Methylheptane	4310		mg/kg	504	71.8	50
3-Ethylhexane	654		mg/kg	504	90.1	50
Toluene	1090		mg/kg	504	68.2	50
2-Methylthiophene	ND		mg/kg	504	42.8	50
1,4-Dimethylcyclohexane (trans)	1280		mg/kg	504	65.4	50
3-Methylthiophene	ND		mg/kg	504	58.9	50
1-Octene	ND		mg/kg	1260	77.3	50
Octane	48800		mg/kg	504	59.2	50
1,2-Dimethylcyclohexane (trans)	1780		mg/kg	504	74.0	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 D
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	504	80.6	50
cis-2-Octene	ND		mg/kg	504	57.6	50
Isopropylcyclopentane	ND		mg/kg	504	73.8	50
1,2-Dimethylcyclohexane (cis)	708		mg/kg	504	146.	50
2,5-Dimethylheptane	986		mg/kg	504	84.3	50
3,5-Dimethylheptane	157	J	mg/kg	504	71.0	50
3,3-Dimethylheptane	113	J	mg/kg	504	60.9	50
1,1,4-Trimethylcyclohexane	ND		mg/kg	504	50.1	50
2,3-Dimethylheptane	683		mg/kg	504	57.4	50
3,4-Dimethylheptane	710		mg/kg	504	85.6	50
4-Methyloctane	1980		mg/kg	504	84.1	50
2-Methyloctane	3740		mg/kg	504	129.	50
Ethylbenzene	555		mg/kg	504	54.4	50
2-Ethylthiophene	ND		mg/kg	504	44.3	50
3-Methyloctane	2930		mg/kg	504	56.4	50
3,3-Diethylpentane	ND		mg/kg	504	58.7	50
p/m-Xylene	2020		mg/kg	1010	95.9	50
1-Nonene	ND		mg/kg	1260	68.0	50
trans-3-Nonene	ND		mg/kg	504	59.7	50
cis-3-Nonene	ND		mg/kg	504	94.2	50
Nonane (C9)	41600		mg/kg	504	78.3	50
Styrene	61.4	J	mg/kg	504	50.8	50
o-Xylene	863		mg/kg	504	52.6	50
Xylene (Total)[1]	2880		mg/kg	504	52.6	50
2-Nonene	ND		mg/kg	1260	63.9	50
Isopropylcyclohexane	ND		mg/kg	504	53.4	50
Isopropylbenzene	266	J	mg/kg	504	47.1	50
3,3-Dimethyloctane	167	J	mg/kg	504	50.8	50
n-Propylbenzene	437	J	mg/kg	504	44.6	50
2-Methylnonane	2840		mg/kg	504	71.2	50
3-Methylnonane	2000		mg/kg	504	70.2	50
1-Methyl-3-Ethylbenzene	888		mg/kg	504	79.6	50
1-Methyl-4-Ethylbenzene	322	J	mg/kg	504	71.0	50
1,3,5-Trimethylbenzene	515		mg/kg	504	57.9	50
1-Decene	ND		mg/kg	504	65.4	50
Isobutylcyclohexane	ND		mg/kg	504	41.0	50
1-Methyl-2-Ethylbenzene	359	J	mg/kg	504	42.8	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 D
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	38100		mg/kg	504	68.2	50
tert-Butylbenzene	61.2	J	mg/kg	504	53.1	50
1,2,4-Trimethylbenzene	1150		mg/kg	504	52.1	50
Isobutylbenzene	122	J	mg/kg	504	68.0	50
sec-Butylbenzene	201	J	mg/kg	504	65.2	50
1-Methyl-3-Isopropylbenzene	249	J	mg/kg	504	65.0	50
1-Methyl-4-Isopropylbenzene	130	J	mg/kg	504	53.4	50
1,2,3-Trimethylbenzene	416	J	mg/kg	504	56.1	50
1-Methyl-2-Isopropylbenzene	ND		mg/kg	504	54.6	50
Indane	37.8	J	mg/kg	504	31.0	50
1,3-Diethylbenzene	140	J	mg/kg	504	62.7	50
1-Methyl-3-N-Propylbenzene	584		mg/kg	504	50.8	50
Indene	ND		mg/kg	504	29.2	50
1-Methyl-4-N-Propylbenzene	216	J	mg/kg	504	62.9	50
n-Butylbenzene	286	J	mg/kg	504	49.6	50
1,2-Dimethyl-4-Ethylbenzene	282	J	mg/kg	504	61.7	50
1,2-Diethylbenzene	ND		mg/kg	504	74.5	50
1-Methyl-2-N-Propylbenzene	264	J	mg/kg	504	62.7	50
1,4-Dimethyl-2-Ethylbenzene	178	J	mg/kg	504	47.1	50
Undecane	35500		mg/kg	504	55.9	50
1,3-Dimethyl-4-Ethylbenzene	208	J	mg/kg	504	48.8	50
1,3-Dimethyl-5-Ethylbenzene	316	J	mg/kg	504	59.4	50
1,3-Dimethyl-2-Ethylbenzene	90.9	J	mg/kg	504	37.5	50
1,2-Dimethyl-3-Ethylbenzene	114	J	mg/kg	504	32.0	50
1,2,4,5-Tetramethylbenzene	107	J	mg/kg	504	39.0	50
1,2,3,5-Tetramethylbenzene	177	J	mg/kg	504	38.3	50
N-Pentylbenzene	84.6	J	mg/kg	504	62.7	50
1,2,3,4-Tetramethylbenzene	58.9	J	mg/kg	504	53.9	50
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	504	71.8	50
Dodecane (C12)	19700		mg/kg	1260	165.	50
1,3,5-Triethylbenzene	ND		mg/kg	504	95.7	50
Naphthalene	ND		mg/kg	504	210.	50
Benzothiophene	ND		mg/kg	504	266.	50
1,2,4-Triethylbenzene	ND		mg/kg	504	85.6	50
Hexylbenzene	129	J	mg/kg	504	96.9	50
MMT	ND		mg/kg	1260	324.	50
Tridecane	20200		mg/kg	1260	351.	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 D
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
2-Methylnaphthalene	ND		mg/kg	1260	333.	50
1-Methylnaphthalene	ND		mg/kg	1260	370.	50
Tetradecane (C14)	16300		mg/kg	1260	154.	50
Pentadecane	16600		mg/kg	1260	281.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	93		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					
3-Methyl-1-butene	ND		mg/kg	10.0	1.48
Isopentane	7.52	J	mg/kg	10.0	1.83
1-Pentene	ND		mg/kg	10.0	1.82
2-Methyl-1-Butene	ND		mg/kg	10.0	1.56
Pentane	ND		mg/kg	10.0	3.12
trans-2-Pentene	ND		mg/kg	10.0	1.35
Isoprene	ND		mg/kg	10.0	1.78
cis-2-Pentene	ND		mg/kg	10.0	1.61
Tertiary Butanol	ND		mg/kg	125	16.2
2,2-Dimethylbutane	ND		mg/kg	10.0	3.08
4-Methyl-1-pentene	ND		mg/kg	10.0	1.56
Cyclopentane	ND		mg/kg	10.0	2.60
2,3-Dimethylbutane	ND		mg/kg	10.0	4.13
2-Methylpentane	ND		mg/kg	10.0	2.71
Methyl tert butyl ether	ND		mg/kg	10.0	2.06
3-Methylpentane	ND		mg/kg	10.0	1.58
1-Hexene	ND		mg/kg	10.0	1.40
n-Hexane	4.77	J	mg/kg	10.0	1.64
Isopropyl Ether	ND		mg/kg	10.0	1.21
trans-2-Hexene	ND		mg/kg	10.0	1.30
2-Methyl-2-pentene	ND		mg/kg	10.0	1.53
cis-2-Hexene	ND		mg/kg	10.0	1.36
Ethyl-Tert-Butyl-Ether	ND		mg/kg	10.0	1.52
2,2-Dimethylpentane	ND		mg/kg	10.0	1.34
Methylcyclopentane	ND		mg/kg	10.0	1.34
2,4-Dimethylpentane	ND		mg/kg	10.0	1.24
2,2,3-Trimethylbutane	ND		mg/kg	10.0	1.35
1,2-Dichloroethane	ND		mg/kg	10.0	1.48
3,3-Dimethylpentane	ND		mg/kg	10.0	1.86

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					
Cyclohexane	ND		mg/kg	10.0	1.24
2-Methylhexane	ND		mg/kg	10.0	1.58
Benzene	ND		mg/kg	10.0	1.52
2,3-Dimethylpentane	ND		mg/kg	10.0	1.32
Thiophene	ND		mg/kg	10.0	1.42
1,1-Dimethylcyclopentane	ND		mg/kg	10.0	1.20
3-Methylhexane	ND		mg/kg	10.0	1.60
Tertiary-Amyl Methyl Ether	ND		mg/kg	10.0	1.23
1,3-Dimethylcyclopentane (cis)	ND		mg/kg	10.0	1.50
3-Ethylpentane	ND		mg/kg	10.0	1.44
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	20.0	2.92
Isooctane	ND		mg/kg	10.0	1.09
trans-3-Heptene	ND		mg/kg	10.0	1.56
Heptane	ND		mg/kg	10.0	1.74
trans-2-Heptene	ND		mg/kg	10.0	1.28
cis-2-Heptene	ND		mg/kg	10.0	1.94
2,2-Dimethylhexane	ND		mg/kg	10.0	1.45
Methylcyclohexane	ND		mg/kg	10.0	1.35
2,5-Dimethylhexane	ND		mg/kg	10.0	1.74
2,4-Dimethylhexane	ND		mg/kg	10.0	1.22
Ethylcyclopentane	ND		mg/kg	10.0	1.32
2,2,3-Trimethylpentane	ND		mg/kg	10.0	1.74
2,3,4-Trimethylpentane	ND		mg/kg	10.0	1.30
2,3,3-Trimethylpentane	ND		mg/kg	10.0	1.98
2,3-Dimethylhexane	ND		mg/kg	10.0	2.42
2-Methylheptane	ND		mg/kg	10.0	1.69
4-Methylheptane	ND		mg/kg	10.0	1.72
3-Methylheptane	ND		mg/kg	10.0	1.42
3-Ethylhexane	ND		mg/kg	10.0	1.79

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					
Toluene	ND		mg/kg	10.0	1.36
2-Methylthiophene	ND		mg/kg	10.0	0.850
1,4-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.30
3-Methylthiophene	ND		mg/kg	10.0	1.17
1-Octene	ND		mg/kg	25.0	1.54
Octane	ND		mg/kg	10.0	1.18
1,2-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.47
1,2-Dibromoethane	ND		mg/kg	10.0	1.60
cis-2-Octene	ND		mg/kg	10.0	1.14
Isopropylcyclopentane	ND		mg/kg	10.0	1.46
1,2-Dimethylcyclohexane (cis)	ND		mg/kg	10.0	2.90
2,5-Dimethylheptane	ND		mg/kg	10.0	1.68
3,5-Dimethylheptane	ND		mg/kg	10.0	1.41
3,3-Dimethylheptane	ND		mg/kg	10.0	1.21
1,1,4-Trimethylcyclohexane	ND		mg/kg	10.0	0.995
2,3-Dimethylheptane	ND		mg/kg	10.0	1.14
3,4-Dimethylheptane	ND		mg/kg	10.0	1.70
4-Methyloctane	ND		mg/kg	10.0	1.67
2-Methyloctane	ND		mg/kg	10.0	2.56
Ethylbenzene	ND		mg/kg	10.0	1.08
2-Ethylthiophene	ND		mg/kg	10.0	0.880
3-Methyloctane	ND		mg/kg	10.0	1.12
3,3-Diethylpentane	ND		mg/kg	10.0	1.16
p/m-Xylene	ND		mg/kg	20.0	1.90
1-Nonene	ND		mg/kg	25.0	1.35
trans-3-Nonene	ND		mg/kg	10.0	1.18
cis-3-Nonene	ND		mg/kg	10.0	1.87
Nonane (C9)	ND		mg/kg	10.0	1.56
Styrene	ND		mg/kg	10.0	1.01

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					
o-Xylene	ND		mg/kg	10.0	1.04
Xylene (Total)[1]	ND		mg/kg	10.0	1.04
2-Nonene	ND		mg/kg	25.0	1.27
Isopropylcyclohexane	ND		mg/kg	10.0	1.06
Isopropylbenzene	ND		mg/kg	10.0	0.935
3,3-Dimethyloctane	ND		mg/kg	10.0	1.01
n-Propylbenzene	ND		mg/kg	10.0	0.885
2-Methylnonane	ND		mg/kg	10.0	1.42
3-Methylnonane	ND		mg/kg	10.0	1.40
1-Methyl-3-Ethylbenzene	ND		mg/kg	10.0	1.58
1-Methyl-4-Ethylbenzene	ND		mg/kg	10.0	1.41
1,3,5-Trimethylbenzene	ND		mg/kg	10.0	1.15
1-Decene	ND		mg/kg	10.0	1.30
Isobutylcyclohexane	ND		mg/kg	10.0	0.815
1-Methyl-2-Ethylbenzene	ND		mg/kg	10.0	0.850
Decane (C10)	ND		mg/kg	10.0	1.36
tert-Butylbenzene	ND		mg/kg	10.0	1.06
1,2,4-Trimethylbenzene	ND		mg/kg	10.0	1.04
Isobutylbenzene	ND		mg/kg	10.0	1.35
sec-Butylbenzene	ND		mg/kg	10.0	1.30
1-Methyl-3-Isopropylbenzene	ND		mg/kg	10.0	1.29
1-Methyl-4-Isopropylbenzene	ND		mg/kg	10.0	1.06
1,2,3-Trimethylbenzene	ND		mg/kg	10.0	1.12
1-Methyl-2-Isopropylbenzene	ND		mg/kg	10.0	1.08
Indane	ND		mg/kg	10.0	0.615
1,3-Diethylbenzene	ND		mg/kg	10.0	1.24
1-Methyl-3-N-Propylbenzene	ND		mg/kg	10.0	1.01
Indene	ND		mg/kg	10.0	0.580
1-Methyl-4-N-Propylbenzene	ND		mg/kg	10.0	1.25

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					
n-Butylbenzene	ND		mg/kg	10.0	0.985
1,2-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	1.22
1,2-Diethylbenzene	ND		mg/kg	10.0	1.48
1-Methyl-2-N-Propylbenzene	ND		mg/kg	10.0	1.24
1,4-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.935
Undecane	ND		mg/kg	10.0	1.11
1,3-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	0.970
1,3-Dimethyl-5-Ethylbenzene	ND		mg/kg	10.0	1.18
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.745
1,2-Dimethyl-3-Ethylbenzene	ND		mg/kg	10.0	0.635
1,2,4,5-Tetramethylbenzene	ND		mg/kg	10.0	0.775
1,2,3,5-Tetramethylbenzene	ND		mg/kg	10.0	0.760
N-Pentylbenzene	ND		mg/kg	10.0	1.24
1,2,3,4-Tetramethylbenzene	ND		mg/kg	10.0	1.07
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	10.0	1.42
Dodecane (C12)	ND		mg/kg	25.0	3.28
1,3,5-Triethylbenzene	ND		mg/kg	10.0	1.90
Naphthalene	ND		mg/kg	10.0	4.18
Benzothiophene	ND		mg/kg	10.0	5.28
1,2,4-Triethylbenzene	ND		mg/kg	10.0	1.70
Hexylbenzene	ND		mg/kg	10.0	1.92
MMT	ND		mg/kg	25.0	6.43
Tridecane	ND		mg/kg	25.0	6.96
2-Methylnaphthalene	ND		mg/kg	25.0	6.61
1-Methylnaphthalene	ND		mg/kg	25.0	7.34
Tetradecane (C14)	ND		mg/kg	25.0	3.06
Pentadecane	ND		mg/kg	25.0	5.58

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 16:41
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1731717-6					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	94		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300359

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1731717-3 WG1731717-4								
1-Pentene	79		82		50-130	4		30
Pentane	83		87		50-130	5		30
Tertiary Butanol	87		93		50-130	7		30
Cyclopentane	88		88		50-130	0		30
2-Methylpentane	89		93		50-130	4		30
Methyl tert butyl ether	85		88		50-130	3		30
3-Methylpentane	93		97		50-130	4		30
1-Hexene	93		97		50-130	4		30
n-Hexane	78		82		50-130	5		30
Isopropyl Ether	86		89		50-130	3		30
Ethyl-Tert-Butyl-Ether	87		90		50-130	3		30
Methylcyclopentane	93		98		50-130	5		30
2,4-Dimethylpentane	96		97		50-130	1		30
Cyclohexane	96		100		50-130	4		30
2-Methylhexane	92		95		50-130	3		30
Benzene	90		93		50-130	3		30
2,3-Dimethylpentane	92		97		50-130	5		30
3-Methylhexane	82		86		50-130	5		30
Tertiary-Amyl Methyl Ether	80		83		50-130	4		30
Isooctane	90		94		50-130	4		30
Heptane	93		97		50-130	4		30
Methylcyclohexane	93		97		50-130	4		30
2-Methylheptane	91		95		50-130	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300359

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1731717-3 WG1731717-4								
3-Methylheptane	89		92		50-130	3		30
Toluene	92		95		50-130	3		30
Octane	90		95		50-130	5		30
Ethylbenzene	90		92		50-130	2		30
p/m-Xylene	92		95		50-130	3		30
Nonane (C9)	82		84		50-130	2		30
o-Xylene	92		94		50-130	2		30
Isopropylbenzene	91		94		50-130	3		30
n-Propylbenzene	92		94		50-130	2		30
1-Methyl-3-Ethylbenzene	90		93		50-130	3		30
1-Methyl-4-Ethylbenzene	94		97		50-130	3		30
1,3,5-Trimethylbenzene	91		94		50-130	3		30
1-Decene	72		76		50-130	5		30
1-Methyl-2-Ethylbenzene	92		94		50-130	2		30
Decane (C10)	87		91		50-130	4		30
1,2,4-Trimethylbenzene	87		89		50-130	2		30
sec-Butylbenzene	94		97		50-130	3		30
1-Methyl-4-N-Propylbenzene	86		88		50-130	2		30
n-Butylbenzene	87		90		50-130	3		30
1,2-Diethylbenzene	87		89		50-130	2		30
Undecane	90		94		50-130	4		30
N-Pentylbenzene	87		90		50-130	3		30
Dodecane (C12)	105		108		50-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300359

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1731717-3 WG1731717-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	92		93		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	100		100		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/13/23 22:38
Analyst: CNC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Naphthalene	63.4		mg/kg	2.36	0.677	1
C1-Naphthalenes	353		mg/kg	2.36	0.677	1
C2-Naphthalenes	640		mg/kg	2.36	0.677	1
C3-Naphthalenes	503		mg/kg	2.36	0.677	1
C4-Naphthalenes	267		mg/kg	2.36	0.677	1
2-Methylnaphthalene	335		mg/kg	2.36	0.608	1
1-Methylnaphthalene	185		mg/kg	2.36	0.742	1
Biphenyl	14.2		mg/kg	2.36	0.728	1
2,6-Dimethylnaphthalene	297		mg/kg	2.36	0.560	1
Dibenzofuran	22.7		mg/kg	2.36	0.742	1
Acenaphthylene	3.55		mg/kg	2.36	0.450	1
Acenaphthene	37.0		mg/kg	2.36	0.415	1
2,3,5-Trimethylnaphthalene	49.5		mg/kg	2.36	0.385	1
Fluorene	49.8		mg/kg	2.36	0.628	1
C1-Fluorenes	379	G	mg/kg	2.36	0.628	1
C2-Fluorenes	104		mg/kg	2.36	0.628	1
C3-Fluorenes	79.0		mg/kg	2.36	0.628	1
Dibenzothiophene	25.9		mg/kg	2.36	0.650	1
C1-Dibenzothiophenes BS	67.4		mg/kg	2.36	0.650	1
C2-Dibenzothiophenes	69.2		mg/kg	2.36	0.650	1
C3-Dibenzothiophenes	41.6		mg/kg	2.36	0.650	1
C4-Dibenzothiophenes	14.9		mg/kg	2.36	0.650	1
Phenanthrene	157		mg/kg	2.36	0.781	1
C1-Phenanthrenes/Anthracenes	146		mg/kg	2.36	0.781	1
C2-Phenanthrenes/Anthr BS	97.0		mg/kg	2.36	0.781	1
C3-Phenanthrenes/Anthracenes	38.0		mg/kg	2.36	0.781	1
C4-Phenanthrenes/Anthracenes	15.2		mg/kg	2.36	0.781	1
Retene	ND		mg/kg	2.36	0.578	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 Date Collected: 01/04/23 10:10

Client ID: TG07-MW-06-230104 Date Received: 01/04/23

Sample Location: 3144 W PASSYUNK AVE. Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Anthracene	39.0		mg/kg	2.36	0.486	1
Carbazole	2.25	J	mg/kg	2.36	0.771	1
Fluoranthene	179		mg/kg	2.36	0.749	1
Benzo(b)fluorene	25.3		mg/kg	2.36	0.683	1
Pyrene	147		mg/kg	2.36	0.620	1
C1-Fluoranthenes/Pyrenes	74.1		mg/kg	2.36	0.620	1
C2-Fluoranthenes/Pyrenes	25.0		mg/kg	2.36	0.620	1
C3-Fluoranthenes/Pyrenes	17.1		mg/kg	2.36	0.620	1
C4-Fluoranthenes/Pyrenes	9.95		mg/kg	2.36	0.620	1
Benz(a)anthracene	59.6		mg/kg	2.36	0.480	1
Chrysene/Triphenylene	51.9		mg/kg	2.36	0.476	1
C1-Chrysenes	20.6		mg/kg	2.36	0.476	1
C2-Chrysenes BS	12.3		mg/kg	2.36	0.476	1
C3-Chrysenes	16.3		mg/kg	2.36	0.476	1
C4-Chrysenes	ND		mg/kg	2.36	0.476	1
Benzo(b)fluoranthene	38.6		mg/kg	2.36	0.613	1
Benzo(j)+(k)fluoranthene	44.2		mg/kg	2.36	0.468	1
Benzo(a)fluoranthene	8.60		mg/kg	2.36	0.468	1
Benzo(e)pyrene	26.7		mg/kg	2.36	0.486	1
Benzo(a)pyrene	42.8		mg/kg	2.36	0.673	1
Perylene	9.72		mg/kg	2.36	0.455	1
Indeno(1,2,3-cd)pyrene	22.3		mg/kg	2.36	0.640	1
Dibenz(a,h)+(a,c)anthracene	5.99		mg/kg	2.36	0.637	1
Benzo(g,h,i)perylene	21.5		mg/kg	2.36	0.626	1
Hopane (T19)	ND		mg/kg	2.36	0.671	1
C23 Tricyclic Terpane (T4)	2.55		mg/kg	2.36	0.671	1
C24 Tricyclic Terpane (T5)	1.36	J	mg/kg	2.36	0.671	1
C25 Tricyclic Terpane (T6)	ND		mg/kg	2.36	0.671	1
C24 Tetracyclic Terpane (T6a)	ND		mg/kg	2.36	0.671	1
C26 Tricyclic Terpane-22S (T6b)	ND		mg/kg	2.36	0.671	1
C26 Tricyclic Terpane-22R (T6c)	ND		mg/kg	2.36	0.671	1
C28 Tricyclic Terpane-22S (T7)	ND		mg/kg	2.36	0.671	1
C28 Tricyclic Terpane-22R (T8)	ND		mg/kg	2.36	0.671	1
C29 Tricyclic Terpane-22S (T9)	ND		mg/kg	2.36	0.671	1
C29 Tricyclic Terpane-22R (T10)	ND		mg/kg	2.36	0.671	1
18a-22,29,30-Trisnorneohopane-TS (T11)	ND		mg/kg	2.36	0.671	1
C30 Tricyclic Terpane-22S	ND		mg/kg	2.36	0.671	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 Date Collected: 01/04/23 10:10

Client ID: TG07-MW-06-230104 Date Received: 01/04/23

Sample Location: 3144 W PASSYUNK AVE. Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
C30 Tricyclic Terpane-22R	ND		mg/kg	2.36	0.671	1
17a(H)-22,29,30-Trisnorhopane-TM (T12)	ND		mg/kg	2.36	0.671	1
17a/b,21b/a 28,30-Bisnorhopane (T14a)	ND		mg/kg	2.36	0.671	1
17a(H),21b(H)-25-Norhopane (T14b)	ND		mg/kg	2.36	0.671	1
30-Norhopane (T15)	ND		mg/kg	2.36	0.671	1
18a(H)-30-Norneohopane-C29Ts (T16)	ND		mg/kg	2.36	0.671	1
17a(H)-Diahopane (X)	ND		mg/kg	2.36	0.671	1
30-Normoretane (T17)	ND		mg/kg	2.36	0.671	1
18a(H)&18b(H)-Oleananes (T18)	ND		mg/kg	2.36	0.671	1
Moretane (T20)	ND		mg/kg	2.36	0.671	1
30-Homohopane-22S (T21)	ND		mg/kg	2.36	0.671	1
30-Homohopane-22R (T22)	ND		mg/kg	2.36	0.671	1
30,31-Bishomohopane-22S (T26)	ND		mg/kg	2.36	0.671	1
30,31-Bishomohopane-22R (T27)	ND		mg/kg	2.36	0.671	1
30,31-Trishomohopane-22S (T30)	ND		mg/kg	2.36	0.671	1
30,31-Trishomohopane-22R (T31)	ND		mg/kg	2.36	0.671	1
Tetrakishomohopane-22S (T32)	ND		mg/kg	2.36	0.671	1
Tetrakishomohopane-22R (T33)	ND		mg/kg	2.36	0.671	1
Pentakishomohopane-22S (T34)	ND		mg/kg	2.36	0.671	1
Pentakishomohopane-22R (T35)	ND		mg/kg	2.36	0.671	1
13b(H),17a(H)-20S-Diacholestane (S4)	ND		mg/kg	2.36	0.523	1
13b(H),17a(H)-20R-Diacholestane (S5)	ND		mg/kg	2.36	0.523	1
13b,17a-20S-Methyldiacholestane (S8)	ND		mg/kg	2.36	0.523	1
17a(H)20SC27/C29dia	0.831	J	mg/kg	2.36	0.523	1
17a(H)20RC27/C29dia	ND		mg/kg	2.36	0.523	1
Unknown Sterane (S18)	ND		mg/kg	2.36	0.523	1
13a,17b-20S-Ethyldiacholestane (S19)	ND		mg/kg	2.36	0.523	1
14a,17a-20S-Methylcholestane (S20)	ND		mg/kg	2.36	0.523	1
14a,17a-20R-Methylcholestane (S24)	ND		mg/kg	2.36	0.523	1
14a(H),17a(H)-20S-Ethylcholestane (S25)	ND		mg/kg	2.36	0.523	1
14a(H),17a(H)-20R-Ethylcholestane (S28)	ND		mg/kg	2.36	0.523	1
14b(H),17b(H)-20R-Cholestane (S14)	0.650	J	mg/kg	2.36	0.523	1
14b(H),17b(H)-20S-Cholestane (S15)	0.570	J	mg/kg	2.36	0.523	1
14b,17b-20R-Methylcholestane (S22)	ND		mg/kg	2.36	0.523	1
14b,17b-20S-Methylcholestane (S23)	ND		mg/kg	2.36	0.523	1
14b(H),17b(H)-20R-Ethylcholestane (S26)	0.674	J	mg/kg	2.36	0.523	1
14b(H),17b(H)-20S-Ethylcholestane (S27)	ND		mg/kg	2.36	0.523	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 Date Collected: 01/04/23 10:10

Client ID: TG07-MW-06-230104 Date Received: 01/04/23

Sample Location: 3144 W PASSYUNK AVE. Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
C26,20R+C27,20S TAS	2.07	J	mg/kg	2.36	0.523	1
C28,20S TAS	1.33	J	mg/kg	2.36	0.523	1
C27,20R TAS	2.00	J	mg/kg	2.36	0.523	1
C28,20R TAS	1.28	J	mg/kg	2.36	0.523	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	83		50-130
Phenanthrene-d10	79		50-130
Benzo(a)pyrene-d12	107		50-130
5B(H)Cholane-Surr	90		50-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/12/23 23:58
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	ND		mg/kg	3.00	0.862
C3-Naphthalenes	ND		mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/12/23 23:58
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
Carbazole	ND		mg/kg	3.00	0.981
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	ND		mg/kg	3.00	0.619
Benzo(a)pyrene	ND		mg/kg	3.00	0.856
Perylene	ND		mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	ND		mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	3.00	0.810
Benzo(g,h,i)perylene	ND		mg/kg	3.00	0.797
Hopane (T19)	ND		mg/kg	3.00	0.854
C23 Tricyclic Terpane (T4)	ND		mg/kg	3.00	0.854
C24 Tricyclic Terpane (T5)	ND		mg/kg	3.00	0.854
C25 Tricyclic Terpane (T6)	ND		mg/kg	3.00	0.854
C24 Tetracyclic Terpane (T6a)	ND		mg/kg	3.00	0.854
C26 Tricyclic Terpane-22S (T6b)	ND		mg/kg	3.00	0.854

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/12/23 23:58
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
C26 Tricyclic Terpane-22R (T6c)	ND		mg/kg	3.00	0.854
C28 Tricyclic Terpane-22S (T7)	ND		mg/kg	3.00	0.854
C28 Tricyclic Terpane-22R (T8)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22S (T9)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22R (T10)	ND		mg/kg	3.00	0.854
18a-22,29,30-Trisnorneohopane-TS (T11)	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22S	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22R	ND		mg/kg	3.00	0.854
17a(H)-22,29,30-Trisnorhopane-TM (T12)	ND		mg/kg	3.00	0.854
17a/b,21b/a 28,30-Bisnorhopane (T14a)	ND		mg/kg	3.00	0.854
17a(H),21b(H)-25-Norhopane (T14b)	ND		mg/kg	3.00	0.854
30-Norhopane (T15)	ND		mg/kg	3.00	0.854
18a(H)-30-Norneohopane-C29Ts (T16)	ND		mg/kg	3.00	0.854
17a(H)-Diahopane (X)	ND		mg/kg	3.00	0.854
30-Normoretane (T17)	ND		mg/kg	3.00	0.854
18a(H)&18b(H)-Oleananes (T18)	ND		mg/kg	3.00	0.854
Moretane (T20)	ND		mg/kg	3.00	0.854
30-Homohopane-22S (T21)	ND		mg/kg	3.00	0.854
30-Homohopane-22R (T22)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22S (T26)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22R (T27)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22S (T30)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22R (T31)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22S (T32)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22R (T33)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22S (T34)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22R (T35)	ND		mg/kg	3.00	0.854
13b(H),17a(H)-20S-Diacholestane (S4)	ND		mg/kg	3.00	0.666
13b(H),17a(H)-20R-Diacholestane (S5)	ND		mg/kg	3.00	0.666

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 01/12/23 23:58
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
13b,17a-20S-Methyldiacholestane (S8)	ND		mg/kg	3.00	0.666
17a(H)20SC27/C29dia	ND		mg/kg	3.00	0.666
17a(H)20RC27/C29dia	ND		mg/kg	3.00	0.666
Unknown Sterane (S18)	ND		mg/kg	3.00	0.666
13a,17b-20S-Ethyldiacholestane (S19)	ND		mg/kg	3.00	0.666
14a,17a-20S-Methylcholestane (S20)	ND		mg/kg	3.00	0.666
14a,17a-20R-Methylcholestane (S24)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20S-Ethylcholestane (S25)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20R-Ethylcholestane (S28)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Cholestane (S14)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Cholestane (S15)	ND		mg/kg	3.00	0.666
14b,17b-20R-Methylcholestane (S22)	ND		mg/kg	3.00	0.666
14b,17b-20S-Methylcholestane (S23)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Ethylcholestane (S26)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Ethylcholestane (S27)	ND		mg/kg	3.00	0.666
C26,20R+C27,20S TAS	ND		mg/kg	3.00	0.666
C28,20S TAS	ND		mg/kg	3.00	0.666
C27,20R TAS	ND		mg/kg	3.00	0.666
C28,20R TAS	ND		mg/kg	3.00	0.666

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	78		50-130
Phenanthrene-d10	106		50-130
Benzo(a)pyrene-d12	105		50-130
5B(H)Cholane-Surr	80		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300359

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1732624-2 WG1732624-3								
Naphthalene	82		86		50-130	5		30
2-Methylnaphthalene	79		83		50-130	5		30
Acenaphthylene	78		80		50-130	3		30
Acenaphthene	86		87		50-130	1		30
Fluorene	87		88		50-130	1		30
Phenanthrene	85		88		50-130	3		30
Anthracene	90		96		50-130	6		30
Fluoranthene	80		83		50-130	4		30
Pyrene	82		86		50-130	5		30
Benz(a)anthracene	76		77		50-130	1		30
Chrysene/Triphenylene	79		82		50-130	4		30
Benzo(b)fluoranthene	78		82		50-130	5		30
Benzo(j)+(k)fluoranthene	96		97		50-130	1		30
Benzo(a)pyrene	84		87		50-130	4		30
Indeno(1,2,3-cd)pyrene	86		89		50-130	3		30
Dibenz(a,h)+(a,c)anthracene	95		97		50-130	2		30
Benzo(g,h,i)perylene	89		90		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300359

Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1732624-2 WG1732624-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	81		83		50-130
Phenanthrene-d10	100		102		50-130
Benzo(a)pyrene-d12	105		105		50-130
5B(H)Cholane-Surr	92		92		50-130

PETROLEUM HYDROCARBONS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300359
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8015D(M)
Analytical Date: 01/19/23 21:52
Analyst: WR
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	157	46.6	1
n-Decane (C10)	171		mg/kg	157	50.1	1
n-Undecane (C11)	365		mg/kg	157	46.9	1
n-Dodecane (C12)	ND		mg/kg	157	34.2	1
n-Tridecane (C13)	134	J	mg/kg	157	43.1	1
2,6,10-Trimethyldodecane (1380)	1140		mg/kg	157	23.6	1
n-Tetradecane (C14)	347		mg/kg	157	23.6	1
2,6,10-Trimethyltridecane (1470)	535		mg/kg	157	18.7	1
n-Pentadecane (C15)	ND		mg/kg	157	18.7	1
n-Hexadecane (C16)	ND		mg/kg	157	23.7	1
Norpristane (1650)	328		mg/kg	157	51.8	1
n-Heptadecane (C17)	ND		mg/kg	157	51.8	1
Pristane	932		mg/kg	157	33.6	1
n-Octadecane (C18)	ND		mg/kg	157	31.5	1
Phytane	507		mg/kg	157	19.7	1
n-Nonadecane (C19)	232		mg/kg	157	40.4	1
n-Eicosane (C20)	36.0	J	mg/kg	157	22.2	1
n-Heneicosane (C21)	ND		mg/kg	157	18.8	1
n-Docosane (C22)	ND		mg/kg	157	16.4	1
n-Tricosane (C23)	ND		mg/kg	157	20.0	1
n-Tetracosane (C24)	ND		mg/kg	157	26.3	1
n-Pentacosane (C25)	90.6	JC	mg/kg	157	83.2	1
n-Hexacosane (C26)	ND		mg/kg	157	23.1	1
n-Heptacosane (C27)	ND		mg/kg	157	18.9	1
n-Octacosane (C28)	ND		mg/kg	157	33.7	1
n-Nonacosane (C29)	ND		mg/kg	157	105.	1
n-Triacontane (C30)	ND		mg/kg	157	18.0	1
n-Hentriacontane (C31)	ND		mg/kg	157	22.3	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01 Date Collected: 01/04/23 10:10

Client ID: TG07-MW-06-230104 Date Received: 01/04/23

Sample Location: 3144 W PASSYUNK AVE. Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	157	19.8	1
n-Tritriacontane (C33)	ND		mg/kg	157	22.1	1
n-Tetratriacontane (C34)	ND		mg/kg	157	25.0	1
n-Pentatriacontane (C35)	ND		mg/kg	157	27.4	1
n-Hexatriacontane (C36)	ND		mg/kg	157	31.2	1
n-Heptatriacontane (C37)	ND		mg/kg	157	34.9	1
n-Octatriacontane (C38)	ND		mg/kg	157	36.6	1
n-Nonatriacontane (C39)	ND		mg/kg	157	51.0	1
n-Tetracontane (C40)	ND		mg/kg	157	51.0	1
Total Petroleum Hydrocarbons (C9-C44)	701000		mg/kg	5180	1140	1
Total Saturated Hydrocarbons	4820	J	mg/kg	157	16.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	99		50-130
d50-Tetracosane	85		50-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/19/23 17:22
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
n-Nonane (C9)	ND		mg/kg	200	59.3
n-Decane (C10)	ND		mg/kg	200	63.8
n-Undecane (C11)	ND		mg/kg	200	59.7
n-Dodecane (C12)	ND		mg/kg	200	43.6
n-Tridecane (C13)	ND		mg/kg	200	54.9
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	200	30.1
n-Tetradecane (C14)	ND		mg/kg	200	30.1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	200	23.9
n-Pentadecane (C15)	ND		mg/kg	200	23.9
n-Hexadecane (C16)	ND		mg/kg	200	30.1
Norpristane (1650)	ND		mg/kg	200	66.0
n-Heptadecane (C17)	ND		mg/kg	200	66.0
Pristane	ND		mg/kg	200	42.7
n-Octadecane (C18)	44.6	J	mg/kg	200	40.1
Phytane	ND		mg/kg	200	25.1
n-Nonadecane (C19)	ND		mg/kg	200	51.4
n-Eicosane (C20)	ND		mg/kg	200	28.3
n-Heneicosane (C21)	ND		mg/kg	200	23.9
n-Docosane (C22)	ND		mg/kg	200	20.9
n-Tricosane (C23)	ND		mg/kg	200	25.4
n-Tetracosane (C24)	ND		mg/kg	200	33.5
n-Pentacosane (C25)	127	JC	mg/kg	200	106.
n-Hexacosane (C26)	ND		mg/kg	200	29.4
n-Heptacosane (C27)	ND		mg/kg	200	24.1
n-Octacosane (C28)	ND		mg/kg	200	42.9
n-Nonacosane (C29)	ND		mg/kg	200	133.
n-Triacontane (C30)	43.0	J	mg/kg	200	22.9
n-Hentriacontane (C31)	85.8	J	mg/kg	200	28.3
n-Dotriacontane (C32)	50.4	J	mg/kg	200	25.2

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 01/19/23 17:22
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 01/12/23 10:27

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1732624-1					
n-Tritriacontane (C33)	ND		mg/kg	200	28.1
n-Tetratriacontane (C34)	ND		mg/kg	200	31.8
n-Pentatriacontane (C35)	ND		mg/kg	200	34.9
n-Hexatriacontane (C36)	43.2	J	mg/kg	200	39.8
n-Heptatriacontane (C37)	ND		mg/kg	200	44.4
n-Octatriacontane (C38)	ND		mg/kg	200	46.6
n-Nonatriacontane (C39)	ND		mg/kg	200	64.9
n-Tetracontane (C40)	ND		mg/kg	200	64.9
Total Petroleum Hydrocarbons (C9-C44)	7630		mg/kg	6600	1450
Total Saturated Hydrocarbons	394	J	mg/kg	200	20.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	97		50-130
d50-Tetracosane	94		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300359
Report Date: 01/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1732624-2 WG1732624-3								
Nonane (C9)	81		87		50-130	7		30
n-Decane (C10)	85		95		50-130	11		30
n-Dodecane (C12)	93		100		50-130	7		30
n-Tetradecane (C14)	91		100		50-130	9		30
n-Hexadecane (C16)	99		109		50-130	10		30
n-Octadecane (C18)	95		105		50-130	10		30
n-Nonadecane (C19)	93		102		50-130	9		30
n-Eicosane (C20)	92		102		50-130	10		30
n-Docosane (C22)	93		102		50-130	9		30
n-Tetracosane (C24)	96		105		50-130	9		30
n-Hexacosane (C26)	93		102		50-130	9		30
n-Octacosane (C28)	91		101		50-130	10		30
n-Triacontane (C30)	91		99		50-130	8		30
n-Hexatriacontane (C36)	88		88		50-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	98		99		50-130
d50-Tetracosane	95		96		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300359
Report Date: 01/20/23

SAMPLE RESULTS

Lab ID: L2300359-01
Client ID: TG07-MW-06-230104
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Density	0.862		g/ml	0.001	NA	1	-	01/12/23 00:00	121,2520C	ALL

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300359

Project Number: P044.001.002 **Report Date:** 01/20/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01 Batch: WG1732840-1										
Density	1.02		g/ml	0.001	NA	1	-	01/12/23 00:00	121,2520C	ALL

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300359
Report Date: 01/20/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1732840-2 QC Sample: L2271579-01 Client ID: DUP Sample						
Density	0.821	0.816	g/ml	1		10

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300359
Report Date: 01/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300359-01A	Vial unpreserved 20ml hard-cap	A	NA		3.4	Y	Absent		A2-DENSITY-2520C(365),A2-PIANO8260(365)
L2300359-01B	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		A2-SHC(365),A2-ALKPAH/BIOMARKER(365)
L2300359-01C	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		A2-SHC(365),A2-ALKPAH/BIOMARKER(365)
L2300359-01X	Vial unpreserved 20ml hard-cap	A	NA		3.4	Y	Absent		A2-PIANO8260(365)
L2300359-01Y	Vial unpreserved 20ml hard-cap	A	NA		3.4	Y	Absent		A2-PIANO8260(365)
L2300359-02A	Vial unpreserved 20ml hard-cap	A	NA		3.4	Y	Absent		ARCHIVE()
L2300359-02B	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		HOLD-PHI()
L2300359-02C	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		HOLD-PHI()
L2300359-02D	Other container unpreserved	A	NA		3.4	Y	Absent		ARCHIVE()
L2300359-02X	Vial unpreserved 20ml hard-cap	A	NA		3.4	Y	Absent		ARCHIVE()
L2300359-02Y	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		ARCHIVE()

Container Comments

L2300359-02A	very low volume rec'd

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300359
Project Number:	P044.001.002	**Report Date:**	01/20/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 1/5/23

ALPHA Job #: L2300359

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 E. Hector Street Suite 400
Phone: 570-447-0555
Fax:
Email: nick.scalia@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Phillips Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001,002
Project Manager: Nick Scalia
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved)
Date Due: 15-Day Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL EQuIS EDD
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
1. PIANO VOCs first priority if low volume samples. Results to EDD@terraphase.com
2. PAHs + Hydrocarbons next.
3. Density least important if low sample volume

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260	41 Keyed PAHs + Biomarkers	Petroleum Hydrocarbons TD - 8015D(m)	Soil Hydrocarbons - 8015D (m)	Density	Sample Specific Comments	TOTAL # BOTTLES
00359-01	T607-MW-06-230104	1/4/23	1010	NAPL	AJS	X	X	X	X	X		3
-02	T607-MW-07-230104	1/4/23	0950	NAPL	AJS	X	X	X	X	X	Low sample volume Include with rpg	3

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type
Preservative

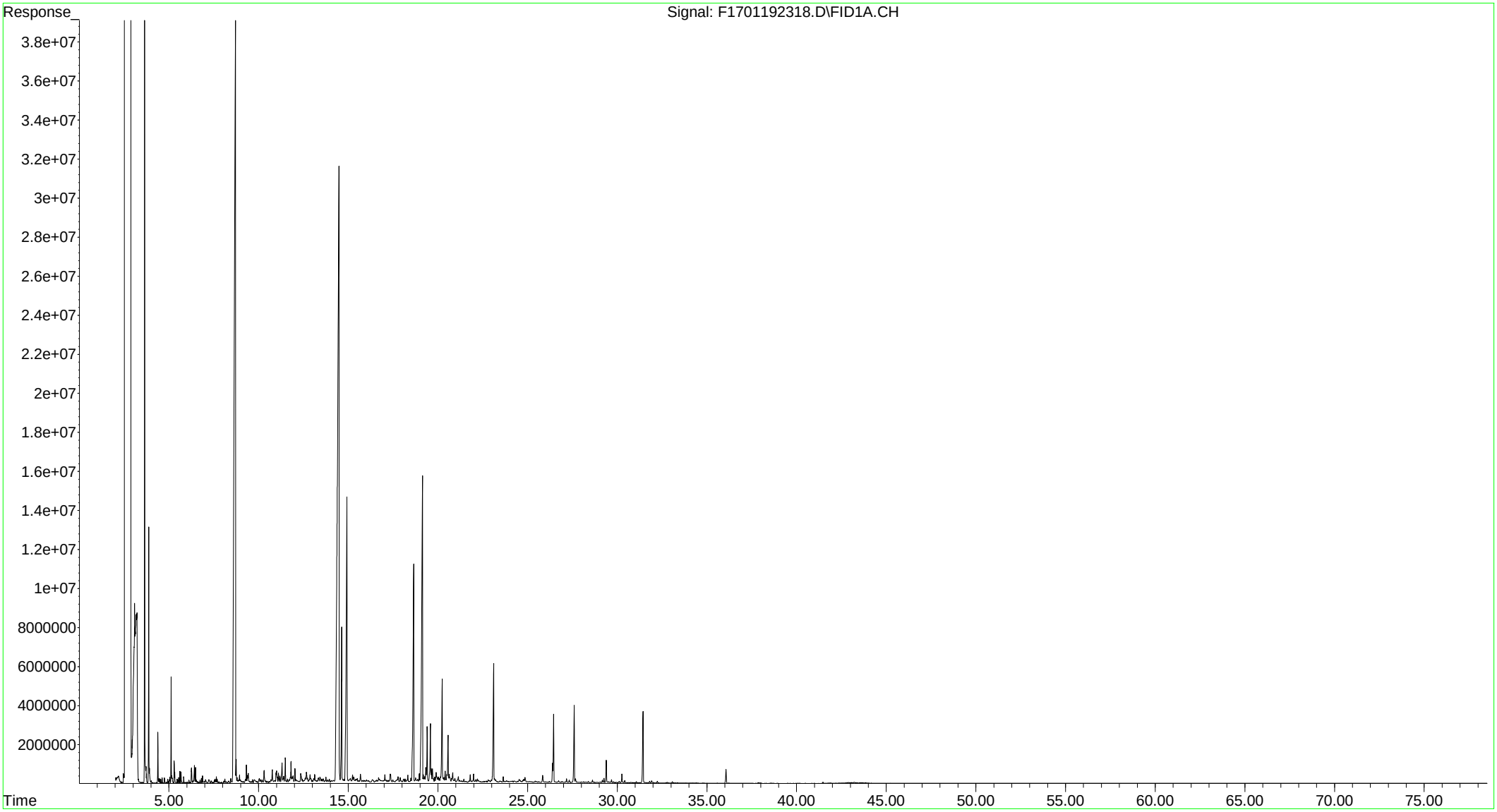
Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1510		1/4/23 15:10
	1/4/23 1800		1/4/23 1800
	1/4/23 2100		1-4-23 2100
	1/5/23 0120		1/5/23 0130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

GC-FID Chromatogram

File :O:\Forensics\Data\FID17\2023\JAN\JAN19\F1701192318.D
Operator : FID17:WR
Acquired : 19 Jan 2023 9:52 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: l2300359-01,42,,,r2f
Misc Info : WG1732857,WG1732624,ICAL19667
Vial Number: 9



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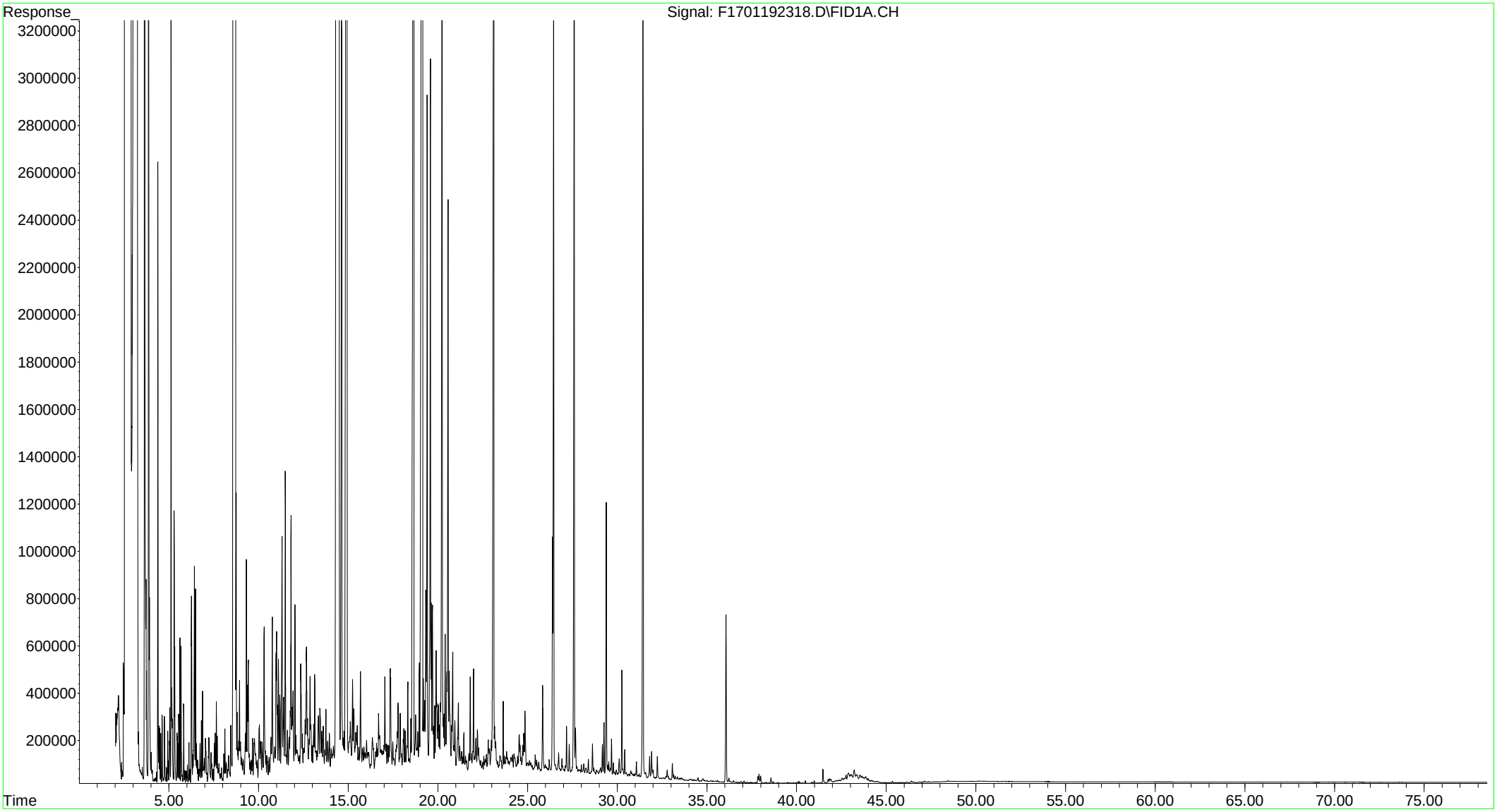
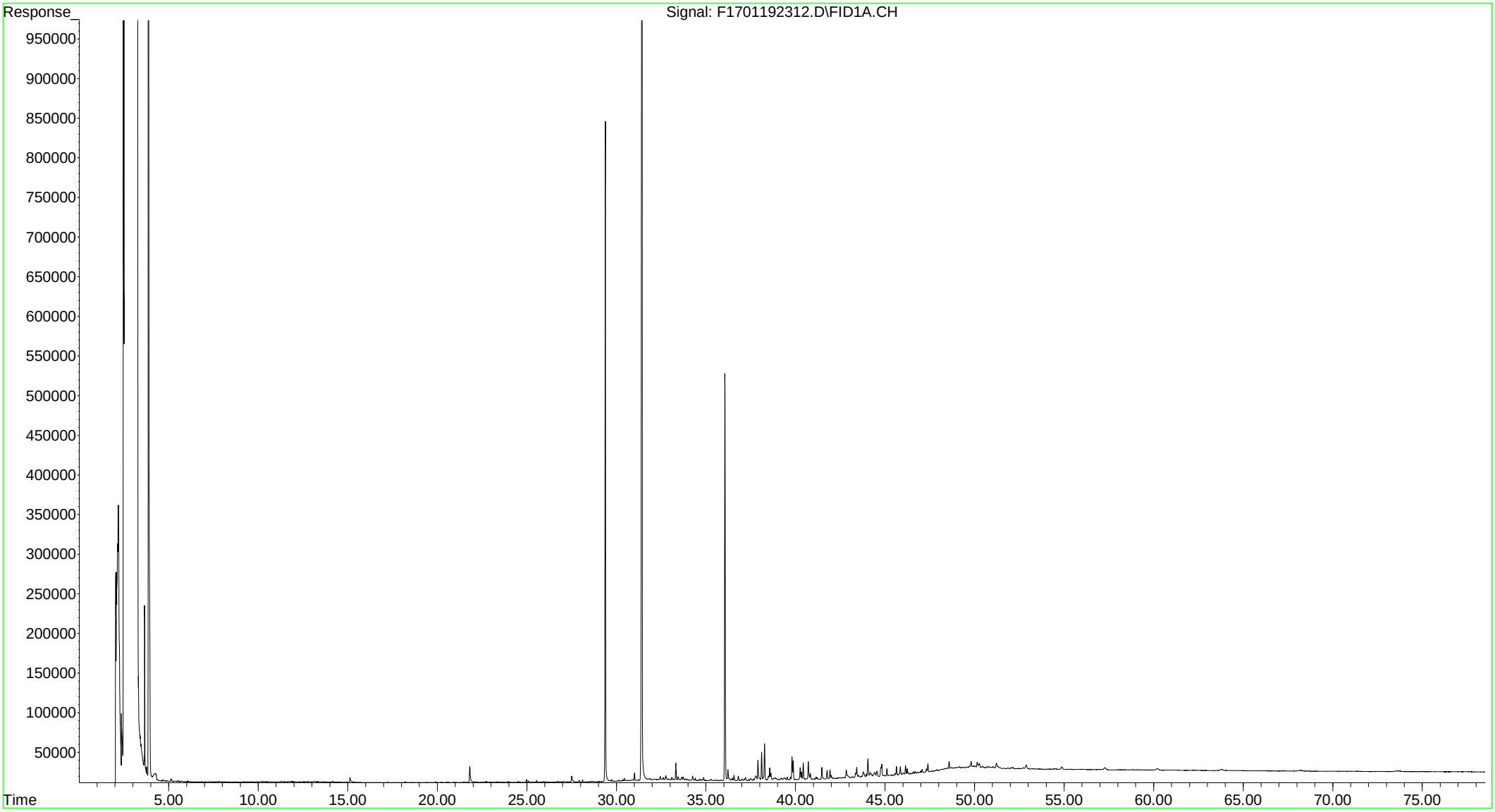
Operator : FID17:WR
Acquired : 19 Jan 2023 9:52 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: l2300359-01,42,,,r2f
Misc Info : WG1732857,WG1732624,ICAL19667
Vial Number: 9



File :O:\Forensics\Data\FID17\2023\JAN\JAN19\F1701192312.D
Operator : FID17:WR
Acquired : 19 Jan 2023 5:22 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: WG1732624-1,42,,
Misc Info : WG1732857,WG1732624,ICAL19667
Vial Number: 6



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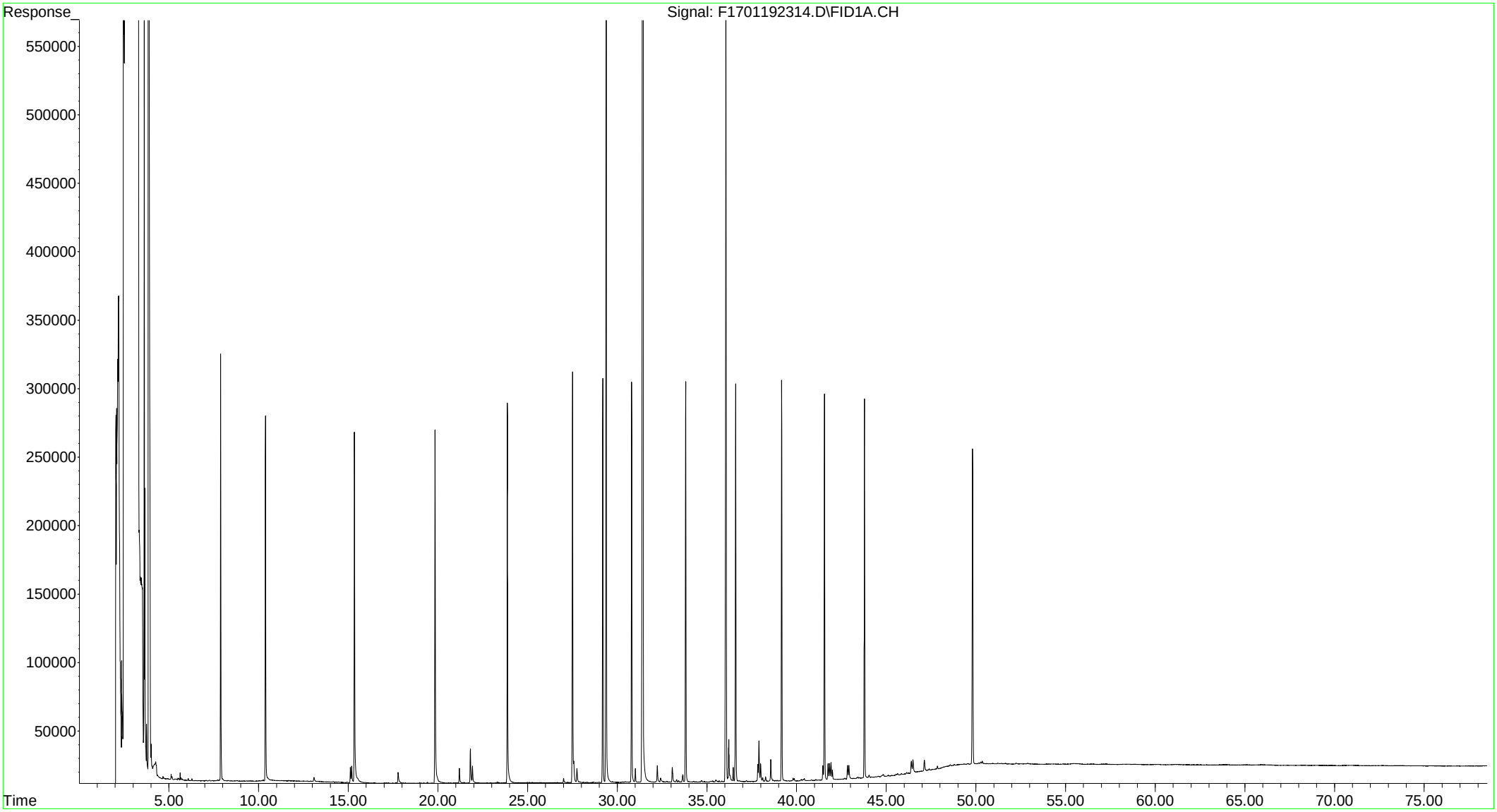
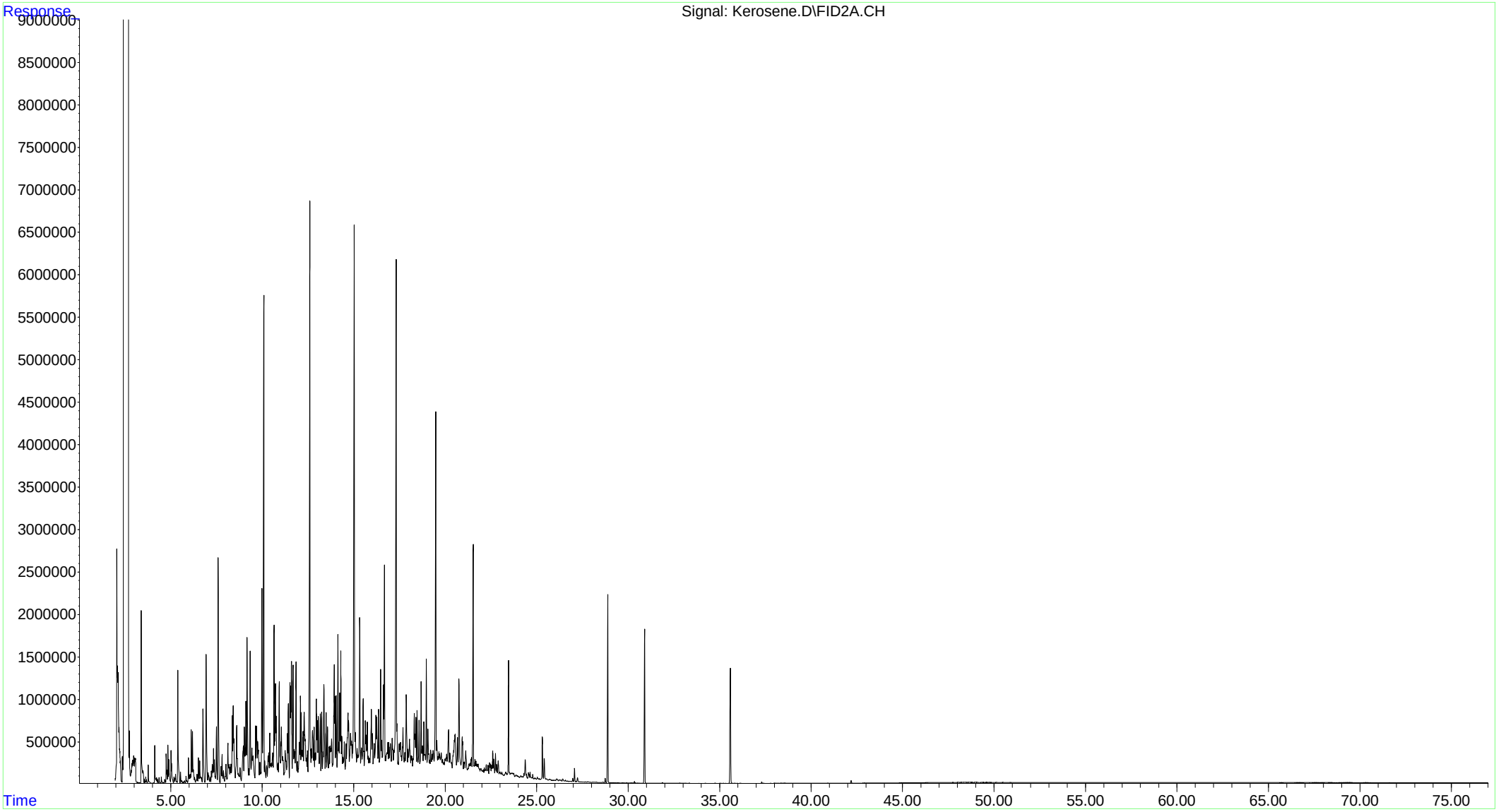
Operator : FID17:WR
Acquired : 19 Jan 2023 6:52 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: wg1732624-2,42,,
Misc Info : WG1732857,WG1732624,ICAL19667
Vial Number: 7

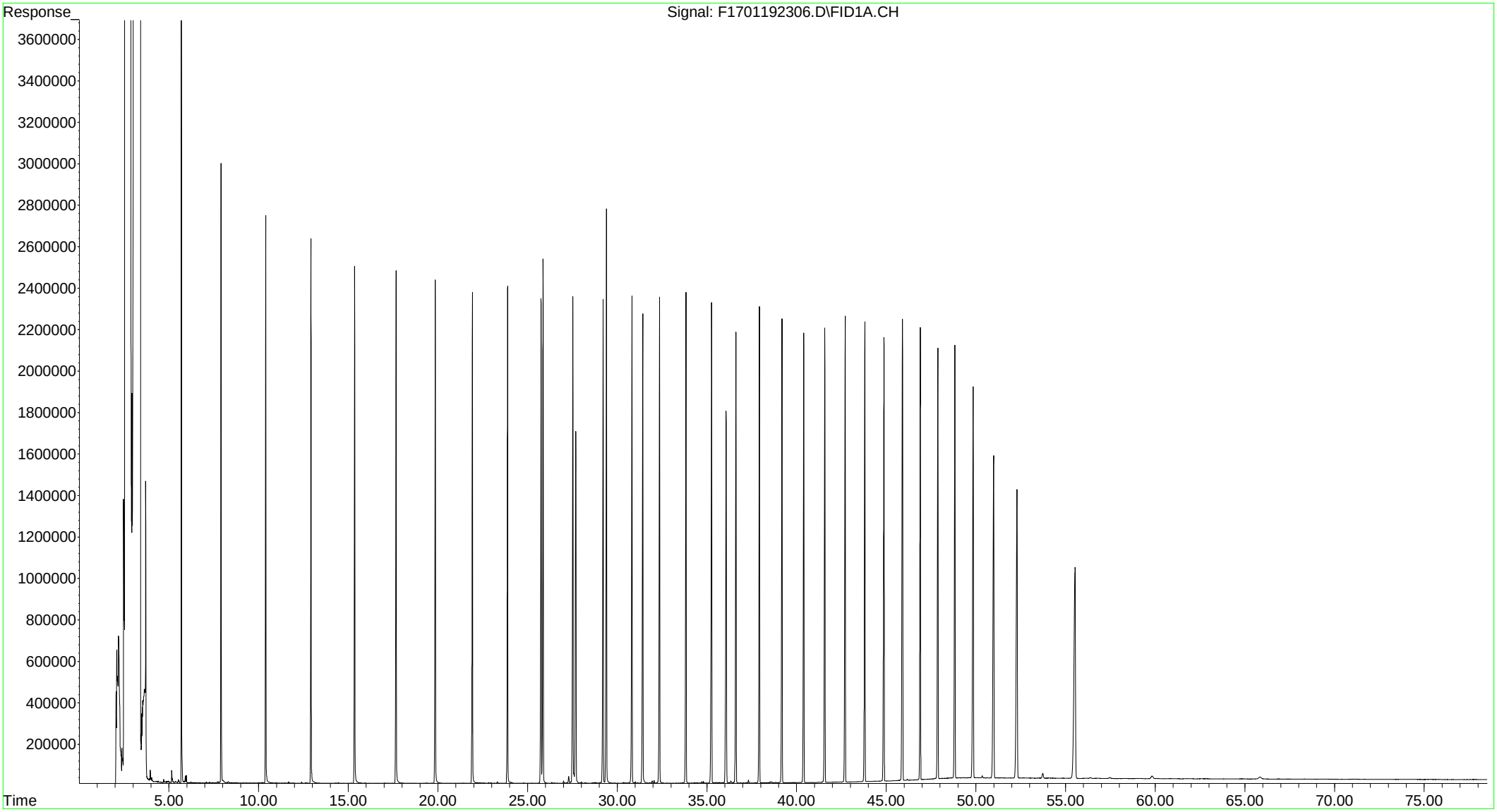


Petroleum Reference Standards

File :O:\Forensics\LIBRARY\Hydrocarbon Reference Standards\Kerosen
... e.D
Operator : PAH2:AC
Instrument : PAH 2
Acquired : 21 Nov 2011 9:22 pm using AcqMethod FRNC2AF.M
Sample : KEROSENE
Misc Info : 1X F042710G



File :O:\Forensics\Data\FID17\2023\JAN\JAN19\F1701192306.D
Operator : FID17:WR
Acquired : 19 Jan 2023 12:53 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: WG1732857-1
Misc Info : WG1732857,FRBF60,ICAL19667
Vial Number: 3



ANALYTICAL REPORT

Lab Number:	L2300364
Client:	Terraphase Engineering Inc. 1100 East Hector Street Suite 416 Conshohocken, PA 19428
ATTN:	Nick Scala
Phone:	(215) 297-3502
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	01/06/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300364-01	TG04-MW-03-230104	WATER	3144 W PASSYUNK AVE.	01/04/23 09:40	01/04/23
L2300364-02	TG04-MW-03-230104D	WATER	3144 W PASSYUNK AVE.	01/04/23 09:40	01/04/23
L2300364-03	TG07-MW-02-230104	WATER	3144 W PASSYUNK AVE.	01/04/23 13:20	01/04/23
L2300364-04	TB-230104-2	WATER	3144 W PASSYUNK AVE.	01/04/23 00:00	01/04/23
L2300364-05	FB-230104-2	WATER	3144 W PASSYUNK AVE.	01/04/23 11:10	01/04/23
L2300364-06	TG07-MW-03-230104	WATER	3144 W PASSYUNK AVE.	01/04/23 14:05	01/04/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300364
Project Number:	P044.001.002	**Report Date:**	01/06/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300364
Project Number:	P044.001.002	**Report Date:**	01/06/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2300364-03 and WG1730461-6/-7: The pH was greater than two; however, the sample was analyzed within the method required holding time.

Microextractables

The WG1730299-2 LCS recovery for 1,2-dibromoethane (130%), associated with L2300364-01 through -06, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

The WG1730299-4 MSD recovery for 1,2-dibromoethane (125%), performed on L2300364-03, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 01/06/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-01
Client ID: TG04-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 12:32
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-01 Date Collected: 01/04/23 09:40
Client ID: TG04-MW-03-230104 Date Received: 01/04/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 11:27
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-02
Client ID: TG04-MW-03-230104D
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 12:40
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-02
Client ID: TG04-MW-03-230104D
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 11:53
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-03
Client ID: TG07-MW-02-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 13:20
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 12:49
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-03 Date Collected: 01/04/23 13:20
Client ID: TG07-MW-02-230104 Date Received: 01/04/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 12:18
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	0.36	J	ug/l	1.0	0.17	1
Benzene	17		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	1.4		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.42	J	ug/l	0.50	0.17	1
p/m-Xylene	0.73	J	ug/l	1.0	0.33	1
o-Xylene	0.80	J	ug/l	1.0	0.39	1
Xylenes, Total	1.5	J	ug/l	1.0	0.33	1
Isopropylbenzene	67		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	0.24	J	ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	0.50	J	ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-04
Client ID: TB-230104-2
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 00:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 12:57
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-04 Date Collected: 01/04/23 00:00
Client ID: TB-230104-2 Date Received: 01/04/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 10:35
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-05
Client ID: FB-230104-2
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 11:10
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 13:05
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-05 Date Collected: 01/04/23 11:10
Client ID: FB-230104-2 Date Received: 01/04/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 11:01
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-06
Client ID: TG07-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 14:05
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/05/23 13:13
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-06 Date Collected: 01/04/23 14:05
Client ID: TG07-MW-03-230104 Date Received: 01/04/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 12:45
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.36	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	0.23	J	ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	0.67	J	ug/l	1.0	0.33	1
o-Xylene	0.55	J	ug/l	1.0	0.39	1
Xylenes, Total	1.2	J	ug/l	1.0	0.33	1
Isopropylbenzene	4.0		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	3.4		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 01/05/23 11:42
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/05/23 10:44

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-06 Batch: WG1730299-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300364

Project Number: P044.001.002 **Report Date:** 01/06/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/05/23 09:43
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1730461-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300364

Report Date: 01/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-06 Batch: WG1730299-2								
1,2-Dibromoethane	**130**	Q	-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300364

Report Date: 01/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1730461-3 WG1730461-4								
Methyl tert butyl ether	97		95		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	110		100		70-130	10		20
1,2-Dibromoethane	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	105		105		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	98		96		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300364

Report Date: 01/06/23

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1730299-3 WG1730299-4 QC Sample: L2300364-03 Client ID: TG07-MW-02-230104													
1,2-Dibromoethane	ND	0.247	0.276	112		0.314	**125**	Q	80-120	13		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1730461-6 WG1730461-7 QC Sample: L2300364-03 Client ID: TG07-MW-02-230104												
Methyl tert butyl ether	0.36J	10	9.7	97		9.8	98		63-130	1		20
Benzene	17	10	27	100		27	100		70-130	0		20
1,2-Dichloroethane	ND	10	10	100		10	100		70-130	0		20
Toluene	1.4	10	12	106		12	106		70-130	0		20
1,2-Dibromoethane	ND	10	10	100		10	100		70-130	0		20
Ethylbenzene	0.42J	10	11	110		11	110		70-130	0		20
p/m-Xylene	0.73J	20	22	110		22	110		70-130	0		20
o-Xylene	0.80J	20	22	110		22	110		70-130	0		20
Isopropylbenzene	67	10	72	**50**	Q	72	**50**	Q	70-130	0		20
1,3,5-Trimethylbenzene	0.24J	10	11	110		11	110		64-130	0		20
1,2,4-Trimethylbenzene	0.50J	10	11	110		11	110		70-130	0		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
4-Bromofluorobenzene	112		113		70-130
Dibromofluoromethane	95		94		70-130
Toluene-d8	102		102		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-01
Client ID: TG04-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 15:25
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	74		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-02
Client ID: TG04-MW-03-230104D
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 15:42
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	76		15-120
4-Terphenyl-d14	78		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-03
Client ID: TG07-MW-02-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 13:20
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 15:09
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.90		ug/l	0.10	0.05	1
Fluorene	2.2		ug/l	0.10	0.01	1
Phenanthrene	1.8		ug/l	0.05	0.02	1
Anthracene	0.24		ug/l	0.10	0.01	1
Pyrene	0.36		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.11		ug/l	0.05	0.02	1
Chrysene	0.07	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.07		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.07	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.04	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.04	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	68		15-120
4-Terphenyl-d14	60		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-05
Client ID: FB-230104-2
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 11:10
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 15:58
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.09	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	71		15-120
4-Terphenyl-d14	79		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-06
Client ID: TG07-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/04/23 14:05
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 16:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.13		ug/l	0.10	0.05	1
Fluorene	0.58		ug/l	0.10	0.01	1
Phenanthrene	0.63		ug/l	0.05	0.02	1
Anthracene	0.10		ug/l	0.10	0.01	1
Pyrene	0.11		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	60		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 01/05/23 14:20
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 01/05/23 05:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03,05-06 Batch: WG1730130-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	62		15-120
4-Terphenyl-d14	67		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1730130-2 WG1730130-3								
Naphthalene	67		67		40-140	0		40
Fluorene	68		70		40-140	3		40
Phenanthrene	63		66		40-140	5		40
Anthracene	70		72		40-140	3		40
Pyrene	75		78		26-127	4		40
Benzo(a)anthracene	70		78		40-140	11		40
Chrysene	66		66		40-140	0		40
Benzo(b)fluoranthene	73		77		40-140	5		40
Benzo(a)pyrene	75		80		40-140	6		40
Indeno(1,2,3-cd)pyrene	77		80		40-140	4		40
Benzo(ghi)perylene	67		71		40-140	6		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	92		91		23-120
2-Fluorobiphenyl	68		69		15-120
4-Terphenyl-d14	73		78		41-149

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300364

Report Date: 01/06/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03,05-06 QC Batch ID: WG1730130-4 WG1730130-5 QC Sample: L2300364-03 Client ID: TG07-MW-02-230104												
Naphthalene	0.90	3.64	3.0	58		3.5	72		40-140	15		40
Fluorene	2.2	3.64	4.4	61		4.3	58		40-140	2		40
Phenanthrene	1.8	3.64	4.0	61		3.8	55		40-140	5		40
Anthracene	0.24	3.64	2.6	65		2.6	65		40-140	0		40
Pyrene	0.36	3.64	3.0	73		2.9	70		26-127	3		40
Benzo(a)anthracene	0.11	3.64	2.5	66		2.5	66		40-140	0		40
Chrysene	0.07J	3.64	2.3	63		2.2	61		40-140	4		40
Benzo(b)fluoranthene	0.07	3.64	2.5	67		2.6	70		40-140	4		40
Benzo(a)pyrene	0.07J	3.64	2.5	69		2.5	69		40-140	0		40
Indeno(1,2,3-cd)pyrene	0.04J	3.64	2.3	63		2.3	63		40-140	0		40
Benzo(ghi)perylene	0.04J	3.64	2.1	58		2.0	55		40-140	5		40

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Fluorobiphenyl	66		67		15-120
4-Terphenyl-d14	66		64		41-149
Nitrobenzene-d5	87		89		23-120

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-01
Client ID: TG04-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 16:09	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-02
Client ID: TG04-MW-03-230104D
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/04/23 09:40
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 17:06	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-03
Client ID: TG07-MW-02-230104
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/04/23 13:20
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	7.913		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 17:01	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-05
Client ID: FB-230104-2
Sample Location: 3144 W PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 01/04/23 11:10
Date Received: 01/04/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 15:25	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300364
Project Number: P044.001.002
Report Date: 01/06/23

SAMPLE RESULTS

Lab ID: L2300364-06
Client ID: TG07-MW-03-230104
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/04/23 14:05
Date Received: 01/04/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 17:11	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300364
Report Date: 01/06/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03,05-06 Batch: WG1730153-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/05/23 08:56	01/05/23 14:24	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300364

Report Date: 01/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03,05-06 Batch: WG1730153-2								
Lead, Dissolved	97		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03,05-06 QC Batch ID: WG1730153-3 WG1730153-4 QC Sample: L2300364-03 Client ID: TG07-MW-02-230104												
Lead, Dissolved	7.913	530	528.9	98		518.5	96		75-125	2		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300364-01A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-01B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-01C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-01D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-01E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-01G	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-01H	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-02A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-02B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-02C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-02D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-02E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-02F	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-02G	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-02H	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03A1	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03A2	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03B1	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03B2	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300364-03C1	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03C2	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-03D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03D1	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03D2	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03E1	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03E2	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-03F	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-03F1	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-03F2	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-03G	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03G1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03G2	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03H	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03H1	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-03H2	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-04A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-04B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-04C	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-04D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-05A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-05B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-05C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-05D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-05E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-05F	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-05G	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300364
Report Date: 01/06/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300364-05H	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-06A	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-06B	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-06C	Vial HCl preserved	A	NA		3.9	Y	Absent		PA-8260(14)
L2300364-06D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-06E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		8011(14)
L2300364-06F	Plastic 500ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		PB-6020S-PPB(180)
L2300364-06G	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2300364-06H	Amber 250ml unpreserved	A	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)

Container Comments

L2300364-02H Cap cracked, sample intact.

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300364
Project Number:	P044.001.002	**Report Date:**	01/06/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300364
Project Number:	P044.001.002	**Report Date:**	01/06/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300364
Project Number:	P044.001.002	**Report Date:**	01/06/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 1/5/23

ALPHA Job #: L2300364

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd
Princeton NJ 08540 Suite 108
Phone: 215 297 3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 W Passyunk Ave.
Project #: PQUA.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved) 48 hour
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD @ terraphase.com
Equis EDD

ANALYSIS: 8260 - Benzene, Ethylbenzene, methyl tert-butyl; 1,2,4/1,3,5 TMB; 1,2 - Dichloroethane; Butl - 1,2 - Dibromoethane; 8270 (SIM) - Naphthalene; 6020 - (Lead)

SAMPLE HANDLING

Filtration
☐ Done
☒ Not needed all Lead samples
☐ Lab to do
Preservation Direct Filtered
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
00364-01	TG04-MW-03-230104	1/4/22	9:40	GW	KSO	48 hour TAT	8
-02	TG04-MW-03-230104D	1/4/22	9:40	GW	KSO	48 hour TAT	8
-03	TG07-MW-02-230104	1/4/22	13:20	GW	KSO	48 hour TAT	8
	~~TG07-MW-02-230123~~ KSO 1/4 KSO 1/4				KSO		
-03	TG07-MW-02-230104MS	1/4/22	13:20	GW	KSO	48 hour TAT	8
-03	TG07-MW-02-230104MSD	1/4/22	13:20	GW	KSO	48 hour TAT	8
-04	TB-230104-2	1/4/22	13:04	TB	KSO	48 hour TAT	4
-05	FB-230104-2	1/4/22	11:10	FB	KSO	48 hour TAT	8
-06	TG07-MW-03-230104	1/4/22	14:05	GW	AJS	48 hour TAT	8

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1510		1/4/22 15:10
	1/4/23 1800		1/4/23 1800
	1/4/23 2700		1.4.23 2140

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

1/5/23 0120

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2300961
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	03/01/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300961
Report Date: 03/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300961-01	TG07-MW-05-230105	WATER	3144 W PASSYUNK AVE.	01/05/23 09:50	01/06/23
L2300961-02	TG07-MW-04-230105	WATER	3144 W PASSYUNK AVE.	01/05/23 11:05	01/06/23
L2300961-03	TG07-MW-01-230105	WATER	3144 W PASSYUNK AVE.	01/05/23 14:20	01/06/23
L2300961-04	TG07-MW-08-230105	WATER	3144 W PASSYUNK AVE.	01/05/23 15:05	01/06/23
L2300961-05	TG04-MW-01-230106	WATER	3144 W PASSYUNK AVE.	01/06/23 10:30	01/06/23
L2300961-06	S-219-230106	WATER	3144 W PASSYUNK AVE.	01/06/23 09:50	01/06/23
L2300961-07	TB-230106-2	WATER	3144 W PASSYUNK AVE.	01/06/23 00:00	01/06/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300961
Project Number:	P044.001.002	**Report Date:**	03/01/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300961
Project Number:	P044.001.002	**Report Date:**	03/01/23

Case Narrative (continued)

Report Revision

March 01, 2023: The Semivolatile Organics by SIM analyte list has been amended on L2300961-05 and -06.

January 11, 2023: This report includes the results of the 1,2-Dibromoethane by Method 8260D performed on L2300961-01 through -07.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 03/01/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-01
Client ID: TG07-MW-05-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 13:59
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-01 D
Client ID: TG07-MW-05-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 17:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	17.	100
Benzene	11000		ug/l	50	16.	100
1,2-Dichloroethane	ND		ug/l	50	13.	100
Toluene	200		ug/l	75	20.	100
1,2-Dibromoethane	ND		ug/l	200	19.	100
Ethylbenzene	34	J	ug/l	50	17.	100
p/m-Xylene	41	J	ug/l	100	33.	100
o-Xylene	ND		ug/l	100	39.	100
Xylenes, Total	41	J	ug/l	100	33.	100
Isopropylbenzene	7200		ug/l	50	19.	100
1,3,5-Trimethylbenzene	ND		ug/l	250	22.	100
1,2,4-Trimethylbenzene	30	J	ug/l	250	19.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	93		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-02
Client ID: TG07-MW-04-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 11:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:07
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-02 D
Client ID: TG07-MW-04-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 11:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 17:27
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	0.33	2
Benzene	36		ug/l	1.0	0.32	2
1,2-Dichloroethane	ND		ug/l	1.0	0.26	2
Toluene	3.8		ug/l	1.5	0.41	2
1,2-Dibromoethane	ND		ug/l	4.0	0.39	2
Ethylbenzene	1.9		ug/l	1.0	0.33	2
p/m-Xylene	4.7		ug/l	2.0	0.66	2
o-Xylene	2.0		ug/l	2.0	0.78	2
Xylenes, Total	6.7		ug/l	2.0	0.66	2
Isopropylbenzene	290		ug/l	1.0	0.37	2
1,3,5-Trimethylbenzene	0.72	J	ug/l	5.0	0.43	2
1,2,4-Trimethylbenzene	1.4	J	ug/l	5.0	0.38	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	83		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-03
Client ID: TG07-MW-01-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 14:20
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:16
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-03
Client ID: TG07-MW-01-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 14:20
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 17:04
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.34	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	0.25	J	ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-04
Client ID: TG07-MW-08-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 15:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:24
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-04 D
Client ID: TG07-MW-08-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 15:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 16:41
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	25	4.2	25
Benzene	ND		ug/l	12	4.0	25
1,2-Dichloroethane	ND		ug/l	12	3.3	25
Toluene	ND		ug/l	19	5.1	25
1,2-Dibromoethane	ND		ug/l	50	4.8	25
Ethylbenzene	ND		ug/l	12	4.2	25
p/m-Xylene	ND		ug/l	25	8.3	25
o-Xylene	ND		ug/l	25	9.8	25
Xylenes, Total	ND		ug/l	25	8.3	25
Isopropylbenzene	4400		ug/l	12	4.7	25
1,3,5-Trimethylbenzene	ND		ug/l	62	5.4	25
1,2,4-Trimethylbenzene	ND		ug/l	62	4.8	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-05
Client ID: TG04-MW-01-230106
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 10:30
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:33
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-05 D
Client ID: TG04-MW-01-230106
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 10:30
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 16:18
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	5.0	0.83	5
Benzene	580		ug/l	2.5	0.80	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
Toluene	11		ug/l	3.8	1.0	5
1,2-Dibromoethane	ND		ug/l	10	0.96	5
Ethylbenzene	110		ug/l	2.5	0.84	5
p/m-Xylene	170		ug/l	5.0	1.7	5
o-Xylene	16		ug/l	5.0	2.0	5
Xylenes, Total	190		ug/l	5.0	1.7	5
Isopropylbenzene	75		ug/l	2.5	0.94	5
1,3,5-Trimethylbenzene	13		ug/l	12	1.1	5
1,2,4-Trimethylbenzene	54		ug/l	12	0.96	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	91		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-06
Client ID: S-219-230106
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:41
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-06 Date Collected: 01/06/23 09:50
Client ID: S-219-230106 Date Received: 01/06/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 15:54
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	0.28	J	ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-07
Client ID: TB-230106-2
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 00:00
Date Received: 01/06/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 14:50
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-07 Date Collected: 01/06/23 00:00
Client ID: TB-230106-2 Date Received: 01/06/23
Sample Location: 3144 W PASSYUNK AVE. Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 15:31
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300961
Report Date: 03/01/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 01/09/23 11:35
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 10:06

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-07 Batch: WG1730665-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/07/23 13:35
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1731384-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300961

Report Date: 03/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-07 Batch: WG1730665-2								
1,2-Dibromoethane	117		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300961

Report Date: 03/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1731384-3 WG1731384-4								
Methyl tert butyl ether	84		92		63-130	9		20
Benzene	95		98		70-130	3		20
1,2-Dichloroethane	88		91		70-130	3		20
Toluene	99		100		70-130	1		20
1,2-Dibromoethane	97		99		70-130	2		20
Ethylbenzene	96		97		70-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	99		100		64-130	1		20
1,2,4-Trimethylbenzene	99		100		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		99		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	107		110		70-130
Dibromofluoromethane	94		95		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-01
Client ID: TG07-MW-05-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/10/23 16:29
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 01/10/23 12:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	17		ug/l	0.10	0.05	1
Fluorene	2.7		ug/l	0.10	0.01	1
Phenanthrene	2.4		ug/l	0.05	0.02	1
Anthracene	0.27		ug/l	0.10	0.01	1
Pyrene	0.22		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.07		ug/l	0.05	0.02	1
Chrysene	0.04	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.04	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.01	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	110		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	57		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-02
Client ID: TG07-MW-04-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 11:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 13:53
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	4.8		ug/l	0.10	0.01	1
Phenanthrene	4.6		ug/l	0.05	0.02	1
Anthracene	0.43		ug/l	0.10	0.01	1
Pyrene	0.42		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.14		ug/l	0.05	0.02	1
Chrysene	0.11		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.07		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.07	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	116		23-120
2-Fluorobiphenyl	91		15-120
4-Terphenyl-d14	102		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-03
Client ID: TG07-MW-01-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 14:20
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 14:09
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.13		ug/l	0.10	0.01	1
Phenanthrene	0.20		ug/l	0.05	0.02	1
Anthracene	0.05	J	ug/l	0.10	0.01	1
Pyrene	0.14		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.08		ug/l	0.05	0.02	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.01	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	116		23-120
2-Fluorobiphenyl	88		15-120
4-Terphenyl-d14	81		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-04
Client ID: TG07-MW-08-230105
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/05/23 15:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 14:25
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	3.1		ug/l	0.10	0.05	1
Fluorene	2.9		ug/l	0.10	0.01	1
Phenanthrene	1.8		ug/l	0.05	0.02	1
Anthracene	0.24		ug/l	0.10	0.01	1
Pyrene	0.86		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.18		ug/l	0.05	0.02	1
Chrysene	0.07	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.01	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	113		23-120
2-Fluorobiphenyl	87		15-120
4-Terphenyl-d14	104		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-05
Client ID: TG04-MW-01-230106
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 10:30
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 15:14
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	9.4		ug/l	0.10	0.05	1
Fluorene	0.92		ug/l	0.10	0.01	1
Phenanthrene	0.25		ug/l	0.05	0.02	1
Anthracene	0.11		ug/l	0.10	0.01	1
Pyrene	0.06	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.10		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**135**	Q	23-120
2-Fluorobiphenyl	99		15-120
4-Terphenyl-d14	96		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300961
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-06
Client ID: S-219-230106
Sample Location: 3144 W PASSYUNK AVE.

Date Collected: 01/06/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 15:30
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.18		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**121**	Q	23-120
2-Fluorobiphenyl	92		15-120
4-Terphenyl-d14	93		41-149

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300961

Project Number: P044.001.002 **Report Date:** 03/01/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 01/06/23 18:22
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 01/06/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02-06 Batch: WG1730640-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.04	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02
Chrysene	0.02	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	71		15-120
4-Terphenyl-d14	88		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300961
Report Date: 03/01/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 01/10/23 16:12
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 01/10/23 12:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1731825-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	104		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	67		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300961
Report Date: 03/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-06 Batch: WG1730640-2 WG1730640-3								
Naphthalene	51		81		40-140	**45**	Q	40
Fluorene	65		86		40-140	28		40
Phenanthrene	70		87		40-140	22		40
Anthracene	72		89		40-140	21		40
Pyrene	83		100		26-127	19		40
Benzo(a)anthracene	78		92		40-140	16		40
Chrysene	78		91		40-140	15		40
Benzo(b)fluoranthene	77		95		40-140	21		40
Benzo(a)pyrene	81		97		40-140	18		40
Indeno(1,2,3-cd)pyrene	86		101		40-140	16		40
Benzo(ghi)perylene	79		93		40-140	16		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		**125**	Q	23-120
2-Fluorobiphenyl	56		80		15-120
4-Terphenyl-d14	85		101		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300961

Report Date: 03/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1731825-2 WG1731825-3								
Naphthalene	55		66		40-140	18		40
Fluorene	60		69		40-140	14		40
Phenanthrene	61		68		40-140	11		40
Anthracene	62		70		40-140	12		40
Pyrene	61		66		26-127	8		40
Benzo(a)anthracene	65		73		40-140	12		40
Chrysene	64		70		40-140	9		40
Benzo(b)fluoranthene	66		71		40-140	7		40
Benzo(a)pyrene	69		76		40-140	10		40
Indeno(1,2,3-cd)pyrene	77		81		40-140	5		40
Benzo(ghi)perylene	70		75		40-140	7		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	90		113		23-120
2-Fluorobiphenyl	59		70		15-120
4-Terphenyl-d14	60		65		41-149

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-01
Client ID: TG07-MW-05-230105
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/05/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 16:35	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-02
Client ID: TG07-MW-04-230105
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/05/23 11:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 16:40	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-03
Client ID: TG07-MW-01-230105
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/05/23 14:20
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.5930	J	ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 16:45	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-04
Client ID: TG07-MW-08-230105
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/05/23 15:05
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 17:10	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-05
Client ID: TG04-MW-01-230106
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/06/23 10:30
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 17:15	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300961
Project Number: P044.001.002
Report Date: 03/01/23

SAMPLE RESULTS

Lab ID: L2300961-06
Client ID: S-219-230106
Sample Location: 3144 W PASSYUNK AVE.
Date Collected: 01/06/23 09:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 17:21	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300961
Report Date: 03/01/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1731110-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 15:53	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300961

Report Date: 03/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1731110-2								
Lead, Dissolved	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300961
Report Date: 03/01/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1731110-3 QC Sample: L2300961-01 Client ID: TG07-MW-05-230105												
Lead, Dissolved	ND	530	539.3	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300961

Report Date: 03/01/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1731110-4 QC Sample: L2300961-01 Client ID: TG07-MW-05-230105						
Lead, Dissolved	ND	ND	ug/l	NC		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300961
Report Date: 03/01/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300961-01A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-01B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-01C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-01D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-01E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-01F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-01G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-01H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-02A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-02B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-02C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-02D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-02E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-02F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-02G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-02H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-03A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-03B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-03C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-03D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-03E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-03F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-03G	Amber 250ml unpreserved	A	9	9	4.3	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300961-03H	Amber 250ml unpreserved	A	9	9	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-04A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-04B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-04C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-04D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-04E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-04F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-04G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-04H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-05A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-05B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-05C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-05D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-05E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-05F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-05G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-05H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-06A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-06B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-06C	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-06D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-06E	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)
L2300961-06F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		PB-6020S-PPB(180)
L2300961-06G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-06H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		PA-PAHSIM-LVI(7)
L2300961-07A	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-07B	Vial HCl preserved	A	NA		4.3	Y	Absent		PA-8260(14)
L2300961-07C	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300961
Report Date: 03/01/23

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2300961-07D	Vial Na2S2O3 preserved	A	NA		4.3	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300961
Project Number:	P044.001.002	**Report Date:**	03/01/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300961
Project Number:	P044.001.002	**Report Date:**	03/01/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300961
Project Number:	P044.001.002	**Report Date:**	03/01/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/7/23

ALPHA Job #: L2309161

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd
Princeton NJ 08540 Suite 108
Phone: 215 297 3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved)
Date Due: 48 hour TAT Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD @ Terraphase.com
Equis EDD
* See attached sheet for Short List compounds.

ANALYSIS

- VOC's - Short List 1-5
- SVOC's - Short List 1-5
- VOC's - Short List 1-6
- SVOC's - Short List 1-6
- Lead

SAMPLE HANDLING

Filtration
☐ Done
☒ Not needed (new)
☐ Lab to do (filtered)
Preservation (Lab Altered)
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOC's - Short List 1-5	SVOC's - Short List 1-5	VOC's - Short List 1-6	SVOC's - Short List 1-6	Lead	Sample Specific Comments	TOTAL # BOTTLES
009161-01	TG07-MW-05-230105	1/5/23	0950	GW	KJO			X	X	X	48 hour Rush	8
02	TG07-MW-04-230105	1/5/23	1105	GW	KJO			X	X	X	48 hour Rush	8
03	TG07-MW-01-230105	1/5/23	1420	GW	NAK			X	X	X	48 hour Rush	8
04	TG07-MW-08-230105	1/5/23	1505	GW	KJO			X	X	X	48 hour Rush	8
05	TG04-MW-01-230106	1/6/23	1030	GW	KJO	X	X			X	48 hour Rush	8
06	S-219-230106	1/6/23	0950	GW	NAK	X	X			X	48 hour Rush	8
07	TB-230106-2	1/6/23	1120	TB	KJO	X		X			48 hour Rush	8

Container Type														
Preservative														

Relinquished By:	Date/Time	Received By:	Date/Time
	1/6/23/1455		1/6/23 14:55
	1/6/23 1800		1/6/23 1800
	1/6/23 2100		1-6-23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethyl benzene, and 1,3,5-trimethyl benzene.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene.
- **Short List 6**. *Waste Oil*: benzene, toluene, ethyl benzene, cumene, naphthalene (Method 8270), pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)pyrene, and lead.

Serial_No:03012314:15

ANALYTICAL REPORT

Lab Number:	L2301049
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	01/10/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2301049
Report Date: 01/10/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2301049-01	TG07-MW-07-230106	WATER	1344 W PASSYUNK AVE.	01/06/23 15:50	01/06/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Microextractables

The WG1731499-2 LCS recovery for 1,2-dibromoethane (136%), associated with L2301049-01, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 01/10/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2301049
Report Date: 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 01/09/23 18:53
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 16:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2301049
Project Number: P044.001.002
Report Date: 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01 D2
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/09/23 11:19
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	240000		ug/l	1000	320	2000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2301049

Project Number: P044.001.002 **Report Date:** 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01 D
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/07/23 18:13
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	400	66.	400
Benzene	150000	E	ug/l	200	64.	400
1,2-Dichloroethane	ND		ug/l	200	53.	400
Toluene	27000		ug/l	300	81.	400
Ethylbenzene	360		ug/l	200	67.	400
p/m-Xylene	1300		ug/l	400	130	400
o-Xylene	370	J	ug/l	400	160	400
Xylenes, Total	1700	J	ug/l	400	130	400
Isopropylbenzene	5300		ug/l	200	75.	400
1,3,5-Trimethylbenzene	ND		ug/l	1000	87.	400
1,2,4-Trimethylbenzene	220	J	ug/l	1000	76.	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	91		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2301049

Project Number: P044.001.002 **Report Date:** 01/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/07/23 13:35
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1731384-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2301049

Project Number: P044.001.002 **Report Date:** 01/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 10:59
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1731477-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	113		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2301049
Report Date: 01/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 01/09/23 17:14
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 01/09/23 16:22

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1731499-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1731384-3 WG1731384-4								
Methyl tert butyl ether	84		92		63-130	9		20
Benzene	95		98		70-130	3		20
1,2-Dichloroethane	88		91		70-130	3		20
Toluene	99		100		70-130	1		20
Ethylbenzene	96		97		70-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	99		100		64-130	1		20
1,2,4-Trimethylbenzene	99		100		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		99		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	107		110		70-130
Dibromofluoromethane	94		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1731477-3 WG1731477-4								
Benzene	88		88		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		100		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	95		98		70-130
Dibromofluoromethane	103		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1731499-2						
1,2-Dibromoethane	**136**	Q	-		80-120	-		20	A

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2301049
Project Number: P044.001.002
Report Date: 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/08/23 15:46
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	110	E	ug/l	0.10	0.05	1
Fluorene	2.0		ug/l	0.10	0.01	1
Phenanthrene	2.6		ug/l	0.05	0.02	1
Anthracene	0.25		ug/l	0.10	0.01	1
Pyrene	0.30		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.04	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.07	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.01	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**142**	Q	23-120
2-Fluorobiphenyl	98		15-120
4-Terphenyl-d14	96		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2301049
Project Number: P044.001.002
Report Date: 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01 D
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 01/10/23 10:19
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 01/07/23 07:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	130		ug/l	0.50	0.24	5
Benzo(a)anthracene	0.12	J	ug/l	0.25	0.10	5
Chrysene	ND		ug/l	0.50	0.06	5

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2301049

Project Number: P044.001.002 **Report Date:** 01/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 01/06/23 18:22
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 01/06/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1730640-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	0.04	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02
Chrysene	0.02	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	71		15-120
4-Terphenyl-d14	88		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1730640-2 WG1730640-3								
Naphthalene	51		81		40-140	**45**	Q	40
Fluorene	65		86		40-140	28		40
Phenanthrene	70		87		40-140	22		40
Anthracene	72		89		40-140	21		40
Pyrene	83		100		26-127	19		40
Benzo(a)anthracene	78		92		40-140	16		40
Chrysene	78		91		40-140	15		40
Benzo(b)fluoranthene	77		95		40-140	21		40
Benzo(a)pyrene	81		97		40-140	18		40
Indeno(1,2,3-cd)pyrene	86		101		40-140	16		40
Benzo(ghi)perylene	79		93		40-140	16		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		**125**	Q	23-120
2-Fluorobiphenyl	56		80		15-120
4-Terphenyl-d14	85		101		41-149

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2301049
Report Date: 01/10/23

SAMPLE RESULTS

Lab ID: L2301049-01
Client ID: TG07-MW-07-230106
Sample Location: 1344 W PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 01/06/23 15:50
Date Received: 01/06/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 17:26	EPA 3005A	1,6020B	SV

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2301049
Report Date: 01/10/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1731110-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	01/09/23 09:06	01/09/23 15:53	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1731110-2								
Lead, Dissolved	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2301049
Report Date: 01/10/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1731110-3 QC Sample: L2300961-01 Client ID: MS Sample												
Lead, Dissolved	ND	530	539.3	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2301049

Report Date: 01/10/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1731110-4 QC Sample: L2300961-01 Client ID: DUP Sample						
Lead, Dissolved	ND	ND	ug/l	NC		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2301049
Report Date: 01/10/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2301049-01A	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)
L2301049-01B	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)
L2301049-01C	Vial HCl preserved	A	NA		3.3	Y	Absent		PA-8260(14)
L2301049-01D	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)
L2301049-01E	Vial Na2S2O3 preserved	A	NA		3.3	Y	Absent		8011(14)
L2301049-01F	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		PB-6020S-PPB(180)
L2301049-01G	Amber 250ml unpreserved	A	7	7	3.3	Y	Absent		PA-PAHSIM-LVI(7)
L2301049-01H	Amber 250ml unpreserved	A	7	7	3.3	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2301049
Project Number:	P044.001.002	**Report Date:**	01/10/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/7/23

ALPHA Job #: L2301049

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Princeton.
Phone: 215 297 3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Formr Philadelphia Refinery
Project Location: ~~1354~~ Passyunk Ave.
Project #: P044 001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved) 48 hour TAT
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
48 hour rush
EDD @ terraphase.com

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: *see Short Lists 1-6 (VOCs)	*see Short Lists 1-6 (SVOCs)	X Lead	SAMPLE HANDLING	TOTAL # BOTTLES
01049-01	TGO7-MW-07-230106	1/6/22	15:50	GW	KSD	*	*	X	Rush 48 hour	

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)
Sample Specific Comments

Container Type																
Preservative																

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	1/6/22	SSMI	1-6-23 18:02
SSMI	1/6/22 19:44	[signature]	1-6-23 21:00
[signature]	1-7-23 0119	[signature]	1/7/23 0110

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

- **Short List 1**. *Leaded Gasoline, Aviation Gasoline and Jet Fuel*: benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, and lead.
- **Short List 2**. *Unleaded Gasoline*: benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 3**. *Kerosene, Fuel Oil No. 1*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- **Short List 4**. *Diesel Fuel and Fuel Oil No. 2*: benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethyl benzene, and 1,3,5-trimethyl benzene.
- **Short List 5**. *Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids*: benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene.
- **Short List 6**. *Waste Oil*: benzene, toluene, ethyl benzene, cumene, naphthalene (Method 8270), pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)pyrene, and lead.

Serial_No:01102316:44

ANALYTICAL REPORT

Lab Number:	L2306962
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	02/10/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2306962
Report Date: 02/10/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2306962-01	TG07-MW-06-230104	OIL	3144 W. PASSYUNK AVE.	01/04/23 10:10	01/04/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 02/10/23

ORGANICS

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2306962
Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306962-01
Client ID: TG07-MW-06-230104
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 01/04/23 10:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/09/23 14:30
Analyst: DP
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 02/09/23 08:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab						
Tetraethyl Lead	ND		mg/kg	0.972	0.299	1
Tetramethyl Lead	ND		mg/kg	0.972	0.299	1
Trimethyl Ethyl Lead	ND		mg/kg	0.972	0.299	1
Diethyl Dimethyl Lead	ND		mg/kg	0.972	0.299	1
Methyl Triethyl Lead	ND		mg/kg	0.972	0.299	1

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2306962
Report Date: 02/10/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/09/23 12:16
Analyst: DP

Extraction Method: EPA 3580A
Extraction Date: 02/09/23 08:39

Parameter	Result	Qualifier	Units	RL	MDL
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab for sample(s): 01 Batch: WG1742594-1					
Tetraethyl Lead	ND		mg/kg	1.00	0.307
Tetramethyl Lead	ND		mg/kg	1.00	0.307
Trimethyl Ethyl Lead	ND		mg/kg	1.00	0.307
Diethyl Dimethyl Lead	ND		mg/kg	1.00	0.307
Methyl Triethyl Lead	ND		mg/kg	1.00	0.307

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2306962

Report Date: 02/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG1742594-2 WG1742594-3								
Tetraethyl Lead	68		69		50-130	1		30

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2306962
Report Date: 02/10/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2306962-01A	Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		A2-ORGLEAD(365)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2306962
Project Number:	P044.001.002	**Report Date:**	02/10/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2306962 AK 2/8/23

CHAIN OF CUSTODY

PAGE OF

ALPHA
WESTBORO, MA TEL. 508-898-9220 FAX. 508-898-9193
MANSFIELD, MA TEL. 508-822-9300 FAX. 508-822-3288

Date Rec'd in Lab: 1/5/23

ALPHA Job #: ~~L2306959~~

Client Information

Client: Terraphase Engineering
Address: 100 E. Hector Street Suite 400
Phone: 570-447-0555
Fax:
Email: nick.scalia@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former PA Refinery
Project Location: 3144 W. Passyunk Ave
Project #: P044.001.002
Project Manager: Nick Scalia
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved)
Date Due: 15-Day Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL EQuIS EDD
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
1. PIANO VOCs first priority if low volume samples. Results to EDD@terraphase.com
2 PAHs + Hydrocarbons next.
3. Density least important if low sample volume

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260	PAHs + Hydrocarbons 8270 SIM	Density ASTM D1480	8260 Full List	8260 Low Level	TCL + TAL Lead	TOTAL # BOTTLES	Sample Specific Comments
~~06962~~ -1	TGO7-MW-06-230104	1/4/23	1010	NAPL	AJS	X						3	
~~02359~~ -2	TGO7-MW-07-230104	1/4/23	0950	NAPL	AJS	X						3	Low sample volume Include with sample 1

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1510		1/4/23 1510
	1/4/23 1800		1/4/23 1800
	1/4/23 2333		1-4-23 2400
R. MacDougall	1/5/23 0120		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2307343
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	02/17/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2307343-01	TG07-MW-03-230208	WATER	3144 W. PASSYUNK AVE.	02/08/23 09:55	02/10/23
L2307343-02	TG07-MW-02-230208	WATER	3144 W. PASSYUNK AVE.	02/08/23 10:05	02/10/23
L2307343-03	TG07-MW-01-230208	WATER	3144 W. PASSYUNK AVE.	02/08/23 12:10	02/10/23
L2307343-04	TG07-MW-08-230208	WATER	3144 W. PASSYUNK AVE.	02/08/23 12:35	02/10/23
L2307343-05	TG07-MW-04-230208	WATER	3144 W. PASSYUNK AVE.	02/08/23 14:40	02/10/23
L2307343-06	TG04-MW-03-230209	WATER	3144 W. PASSYUNK AVE.	02/09/23 08:45	02/10/23
L2307343-07	TG07-MW-05-230209	WATER	3144 W. PASSYUNK AVE.	02/09/23 10:10	02/10/23
L2307343-08	TG07-MW-05-230209D	WATER	3144 W. PASSYUNK AVE.	02/09/23 10:10	02/10/23
L2307343-09	S-219-230209	WATER	3144 W. PASSYUNK AVE.	02/09/23 12:00	02/10/23
L2307343-10	TG04-MW-01-230209	WATER	3144 W. PASSYUNK AVE.	02/09/23 13:30	02/10/23
L2307343-11	TG04-MW-01-230209D	WATER	3144 W. PASSYUNK AVE.	02/09/23 13:30	02/10/23
L2307343-12	FB-230209-1	WATER	3144 W. PASSYUNK AVE.	02/09/23 14:06	02/10/23
L2307343-13	TB-230209-1	WATER	3144 W. PASSYUNK AVE.	02/09/23 14:06	02/10/23
L2307343-14	FB-230209-2	WATER	3144 W. PASSYUNK AVE.	02/09/23 14:15	02/10/23
L2307343-15	TB-230209-2	WATER	3144 W. PASSYUNK AVE.	02/09/23 14:15	02/10/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2307343-12 and -14: The Field Blank has results for toluene, ethylbenzene, p/m-Xylene, and o-Xylene present above the reporting limit. The samples were re-analyzed and confirmed the original results. The results of the original analyses are reported.

Microextractables

The WG1744376-2 LCS recovery for 1,2-dibromoethane (130%), associated with L2307343-01 through -15, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.
The WG1744376-3/-4 MS/MSD recoveries for 1,2-dibromoethane (132%/132%), performed on L2307343-06, are outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Semivolatile Organics by SIM

L2307343-14: The Field Blank has a result for Naphthalene present above the reporting limit; however, re-extraction achieved similar results. Only the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative Date: 02/17/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-01
Client ID: TG07-MW-03-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 09:55
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 16:38
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-01
Client ID: TG07-MW-03-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 09:55
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 11:11
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	0.23	J	ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	0.89		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.23	J	ug/l	0.50	0.17	1
p/m-Xylene	1.0		ug/l	1.0	0.33	1
o-Xylene	0.55	J	ug/l	1.0	0.39	1
Xylenes, Total	1.6	J	ug/l	1.0	0.33	1
Isopropylbenzene	2.4		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	2.8		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-02
Client ID: TG07-MW-02-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 10:05
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 16:46
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-02
Client ID: TG07-MW-02-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 10:05
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 11:38
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	0.35	J	ug/l	1.0	0.17	1
Benzene	19		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	3.7		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.65		ug/l	0.50	0.17	1
p/m-Xylene	2.3		ug/l	1.0	0.33	1
o-Xylene	1.1		ug/l	1.0	0.39	1
Xylenes, Total	3.4		ug/l	1.0	0.33	1
Isopropylbenzene	30		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	0.30	J	ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	1.0	J	ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-03
Client ID: TG07-MW-01-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 16:54
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-03
Client ID: TG07-MW-01-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 12:04
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	0.31	J	ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-04
Client ID: TG07-MW-08-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:35
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:03
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-04 D
Client ID: TG07-MW-08-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:35
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 13:23
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	40	6.6	40
Benzene	ND		ug/l	20	6.4	40
1,2-Dichloroethane	ND		ug/l	20	5.3	40
Toluene	ND		ug/l	30	8.1	40
1,2-Dibromoethane	ND		ug/l	80	7.7	40
Ethylbenzene	ND		ug/l	20	6.7	40
p/m-Xylene	ND		ug/l	40	13.	40
o-Xylene	ND		ug/l	40	16.	40
Xylenes, Total	ND		ug/l	40	13.	40
Isopropylbenzene	4600		ug/l	20	7.5	40
1,3,5-Trimethylbenzene	ND		ug/l	100	8.7	40
1,2,4-Trimethylbenzene	ND		ug/l	100	7.6	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-05
Client ID: TG07-MW-04-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 14:40
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:11
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-05 D
Client ID: TG07-MW-04-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 14:40
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 13:49
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	4.0	0.66	4
Benzene	64		ug/l	2.0	0.64	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
Toluene	4.6		ug/l	3.0	0.81	4
1,2-Dibromoethane	ND		ug/l	8.0	0.77	4
Ethylbenzene	2.7		ug/l	2.0	0.67	4
p/m-Xylene	4.1		ug/l	4.0	1.3	4
o-Xylene	1.6	J	ug/l	4.0	1.6	4
Xylenes, Total	5.7	J	ug/l	4.0	1.3	4
Isopropylbenzene	360		ug/l	2.0	0.75	4
1,3,5-Trimethylbenzene	ND		ug/l	10	0.87	4
1,2,4-Trimethylbenzene	ND		ug/l	10	0.76	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	90		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-06
Client ID: TG04-MW-03-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 08:45
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:19
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-06
Client ID: TG04-MW-03-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 08:45
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 12:30
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	0.34	J	ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-07
Client ID: TG07-MW-05-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:28
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-07 D
Client ID: TG07-MW-05-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 14:14
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	200	33.	200
Benzene	17000		ug/l	100	32.	200
1,2-Dichloroethane	ND		ug/l	100	26.	200
Toluene	350		ug/l	150	41.	200
1,2-Dibromoethane	ND		ug/l	400	39.	200
Ethylbenzene	ND		ug/l	100	33.	200
p/m-Xylene	ND		ug/l	200	66.	200
o-Xylene	ND		ug/l	200	78.	200
Xylenes, Total	ND		ug/l	200	66.	200
Isopropylbenzene	8400		ug/l	100	37.	200
1,3,5-Trimethylbenzene	ND		ug/l	500	43.	200
1,2,4-Trimethylbenzene	ND		ug/l	500	38.	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-08
Client ID: TG07-MW-05-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:36
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-08 D
Client ID: TG07-MW-05-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 14:41
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	200	33.	200
Benzene	17000		ug/l	100	32.	200
1,2-Dichloroethane	130		ug/l	100	26.	200
Toluene	340		ug/l	150	41.	200
1,2-Dibromoethane	ND		ug/l	400	39.	200
Ethylbenzene	ND		ug/l	100	33.	200
p/m-Xylene	ND		ug/l	200	66.	200
o-Xylene	ND		ug/l	200	78.	200
Xylenes, Total	ND		ug/l	200	66.	200
Isopropylbenzene	8400		ug/l	100	37.	200
1,3,5-Trimethylbenzene	ND		ug/l	500	43.	200
1,2,4-Trimethylbenzene	ND		ug/l	500	38.	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-09
Client ID: S-219-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 12:00
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:44
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-09
Client ID: S-219-230209
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 02/09/23 12:00
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 12:56
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	0.34	J	ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-10
Client ID: TG04-MW-01-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 17:52
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-10 D
Client ID: TG04-MW-01-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 15:07
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	5.0	0.83	5
Benzene	530		ug/l	2.5	0.80	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
Toluene	10		ug/l	3.8	1.0	5
1,2-Dibromoethane	ND		ug/l	10	0.96	5
Ethylbenzene	96		ug/l	2.5	0.84	5
p/m-Xylene	180		ug/l	5.0	1.7	5
o-Xylene	16		ug/l	5.0	2.0	5
Xylenes, Total	200		ug/l	5.0	1.7	5
Isopropylbenzene	64		ug/l	2.5	0.94	5
1,3,5-Trimethylbenzene	12		ug/l	12	1.1	5
1,2,4-Trimethylbenzene	47		ug/l	12	0.96	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-11
Client ID: TG04-MW-01-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 18:01
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-11 D
Client ID: TG04-MW-01-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 15:33
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	5.0	0.83	5
Benzene	510		ug/l	2.5	0.80	5
1,2-Dichloroethane	ND		ug/l	2.5	0.66	5
Toluene	9.6		ug/l	3.8	1.0	5
1,2-Dibromoethane	ND		ug/l	10	0.96	5
Ethylbenzene	89		ug/l	2.5	0.84	5
p/m-Xylene	170		ug/l	5.0	1.7	5
o-Xylene	16		ug/l	5.0	2.0	5
Xylenes, Total	190		ug/l	5.0	1.7	5
Isopropylbenzene	58		ug/l	2.5	0.94	5
1,3,5-Trimethylbenzene	11	J	ug/l	12	1.1	5
1,2,4-Trimethylbenzene	45		ug/l	12	0.96	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-12
Client ID: FB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 18:09
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-12
Client ID: FB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 09:27
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	1.4		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.77		ug/l	0.50	0.17	1
p/m-Xylene	2.8		ug/l	1.0	0.33	1
o-Xylene	1.6		ug/l	1.0	0.39	1
Xylenes, Total	4.4		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-13
Client ID: TB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 18:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-13
Client ID: TB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 09:54
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-14
Client ID: FB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 18:26
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-14
Client ID: FB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 10:20
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	1.7		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	0.91		ug/l	0.50	0.17	1
p/m-Xylene	3.0		ug/l	1.0	0.33	1
o-Xylene	1.7		ug/l	1.0	0.39	1
Xylenes, Total	4.7		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-15
Client ID: TB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 02/14/23 18:34
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-15
Client ID: TB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 10:46
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307343

Project Number: P044.001.002 **Report Date:** 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/13/23 09:01
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-15 Batch: WG1744149-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 02/14/23 15:48
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 02/14/23 14:40

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-15 Batch: WG1744376-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307343

Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-15 Batch: WG1744149-3 WG1744149-4								
Methyl tert butyl ether	74		91		63-130	**21**	Q	20
Benzene	90		97		70-130	7		20
1,2-Dichloroethane	92		100		70-130	8		20
Toluene	95		100		70-130	5		20
1,2-Dibromoethane	87		100		70-130	14		20
Ethylbenzene	96		100		70-130	4		20
p/m-Xylene	95		105		70-130	10		20
o-Xylene	95		105		70-130	10		20
Isopropylbenzene	99		110		70-130	11		20
1,3,5-Trimethylbenzene	98		110		64-130	12		20
1,2,4-Trimethylbenzene	97		100		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		107		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	97		97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307343

Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-15 Batch: WG1744376-2								
1,2-Dibromoethane	**130**	Q	-		80-120	-		20	A

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1744149-6 WG1744149-7 QC Sample: L2307343-06 Client ID: TG04-MW-03-230209												
Methyl tert butyl ether	ND	10	11	110		11	110		63-130	0		20
Benzene	ND	10	12	120		12	120		70-130	0		20
1,2-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
Toluene	0.34J	10	12	120		12	120		70-130	0		20
1,2-Dibromoethane	ND	10	10	100		11	110		70-130	10		20
Ethylbenzene	ND	10	12	120		11	110		70-130	9		20
p/m-Xylene	ND	20	23	115		22	110		70-130	4		20
o-Xylene	ND	20	23	115		23	115		70-130	0		20
Isopropylbenzene	ND	10	12	120		11	110		70-130	9		20
1,3,5-Trimethylbenzene	ND	10	11	110		11	110		64-130	0		20
1,2,4-Trimethylbenzene	ND	10	11	110		11	110		70-130	0		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		106		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		98		70-130
Toluene-d8	98		98		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1744149-8 WG1744149-9 QC Sample: L2307343-07 Client ID: TG07-MW-05-230209												
Methyl tert butyl ether	ND	2000	1900	95		2200	110		63-130	15		20
Benzene	17000	2000	19000	100		20000	**150**	Q	70-130	5		20
1,2-Dichloroethane	ND	2000	2000	100		2400	120		70-130	18		20
Toluene	350	2000	2300	98		2600	113		70-130	12		20
1,2-Dibromoethane	ND	2000	1800	90		2200	110		70-130	20		20
Ethylbenzene	ND	2000	2000	100		2200	110		70-130	10		20
p/m-Xylene	ND	4000	3900	98		4300	108		70-130	10		20
o-Xylene	ND	4000	3900	98		4500	113		70-130	14		20
Isopropylbenzene	8400	2000	10000	80		10000	80		70-130	0		20
1,3,5-Trimethylbenzene	ND	2000	1900	95		2100	105		64-130	10		20
1,2,4-Trimethylbenzene	ND	2000	1900	95		2100	105		70-130	10		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	97		97		70-130
Toluene-d8	98		97		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307343

Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1744376-3 WG1744376-4 QC Sample: L2307343-06 Client ID: TG04-MW-03-230209													
1,2-Dibromoethane	ND	0.248	0.327	**132**	Q	0.330	**132**	Q	80-120	1		20	A

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1744376-5 WG1744376-6 QC Sample: L2307343-07 Client ID: TG07-MW-05-230209													
1,2-Dibromoethane	ND	0.25	0.281	112		0.287	115		80-120	2		20	A

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-01
Client ID: TG07-MW-03-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 09:55
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 14:09
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.13		ug/l	0.10	0.05	1
Fluorene	0.41		ug/l	0.10	0.01	1
Phenanthrene	0.43		ug/l	0.05	0.02	1
Anthracene	0.09	J	ug/l	0.10	0.01	1
Pyrene	0.11		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	23		23-120
2-Fluorobiphenyl	68		15-120
4-Terphenyl-d14	71		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-02
Client ID: TG07-MW-02-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 10:05
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 14:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.33		ug/l	0.10	0.05	1
Fluorene	0.83		ug/l	0.10	0.01	1
Phenanthrene	0.83		ug/l	0.05	0.02	1
Anthracene	0.13		ug/l	0.10	0.01	1
Pyrene	0.26		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.09		ug/l	0.05	0.02	1
Chrysene	0.09	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.08		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.09	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.06	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.06	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	73		15-120
4-Terphenyl-d14	63		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-03
Client ID: TG07-MW-01-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 14:42
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.02	J	ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.05	0.02	1
Anthracene	0.02	J	ug/l	0.10	0.01	1
Pyrene	0.07	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.05	J	ug/l	0.05	0.02	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	76		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-04
Client ID: TG07-MW-08-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 12:35
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 14:58
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.6		ug/l	0.10	0.05	1
Fluorene	1.9		ug/l	0.10	0.01	1
Phenanthrene	1.2		ug/l	0.05	0.02	1
Anthracene	0.18		ug/l	0.10	0.01	1
Pyrene	0.69		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.12		ug/l	0.05	0.02	1
Chrysene	0.10		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.06		ug/l	0.05	0.01	1
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.03	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.03	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	72		15-120
4-Terphenyl-d14	72		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-05
Client ID: TG07-MW-04-230208
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/08/23 14:40
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 15:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.1		ug/l	0.10	0.05	1
Fluorene	5.6		ug/l	0.10	0.01	1
Phenanthrene	4.4		ug/l	0.05	0.02	1
Anthracene	0.33		ug/l	0.10	0.01	1
Pyrene	0.31		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.10		ug/l	0.05	0.02	1
Chrysene	0.09	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.05	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.06	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	88		15-120
4-Terphenyl-d14	69		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-06
Client ID: TG04-MW-03-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 08:45
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 15:31
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	79		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-07
Client ID: TG07-MW-05-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 16:19
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	19		ug/l	0.10	0.05	1
Fluorene	2.7		ug/l	0.10	0.01	1
Phenanthrene	2.0		ug/l	0.05	0.02	1
Anthracene	0.22		ug/l	0.10	0.01	1
Pyrene	0.15		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.05	J	ug/l	0.05	0.02	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.01	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	68		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-08
Client ID: TG07-MW-05-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 17:08
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	21		ug/l	0.10	0.05	1
Fluorene	3.1		ug/l	0.10	0.01	1
Phenanthrene	2.3		ug/l	0.05	0.02	1
Anthracene	0.26		ug/l	0.10	0.01	1
Pyrene	0.16		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.05	J	ug/l	0.05	0.02	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	0.03	J	ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	112		23-120
2-Fluorobiphenyl	89		15-120
4-Terphenyl-d14	83		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-09
Client ID: S-219-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 12:00
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 17:25
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	77		15-120
4-Terphenyl-d14	73		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-10
Client ID: TG04-MW-01-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 17:41
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.19		ug/l	0.10	0.05	1
Fluorene	0.50		ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.05	0.02	1
Anthracene	0.23		ug/l	0.10	0.01	1
Pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	62		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-11
Client ID: TG04-MW-01-230209D
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 17:57
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	1.5		ug/l	0.10	0.05	1
Fluorene	0.55		ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.05	0.02	1
Anthracene	0.32		ug/l	0.10	0.01	1
Pyrene	0.03	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	26		23-120
2-Fluorobiphenyl	90		15-120
4-Terphenyl-d14	74		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-12
Client ID: FB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 18:14
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.07	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	85		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-14
Client ID: FB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 18:30
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 23:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.11		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	75		41-149

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 02/12/23 13:53
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 02/11/23 16:33

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-12,14 Batch: WG1743500-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	0.03	J	ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.03	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02
Chrysene	0.02	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	0.03	J	ug/l	0.10	0.01
Benzo(ghi)perylene	0.03	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	74		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307343

Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-12,14 Batch: WG1743500-2 WG1743500-3								
Naphthalene	57		59		40-140	3		40
Fluorene	62		67		40-140	8		40
Phenanthrene	58		63		40-140	8		40
Anthracene	65		70		40-140	7		40
Pyrene	66		71		26-127	7		40
Benzo(a)anthracene	67		73		40-140	9		40
Chrysene	62		65		40-140	5		40
Benzo(b)fluoranthene	64		73		40-140	13		40
Benzo(a)pyrene	70		75		40-140	7		40
Indeno(1,2,3-cd)pyrene	75		85		40-140	13		40
Benzo(ghi)perylene	65		72		40-140	10		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	78		81		23-120
2-Fluorobiphenyl	65		68		15-120
4-Terphenyl-d14	73		76		41-149

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-12,14 QC Batch ID: WG1743500-4 WG1743500-5 QC Sample: L2307343-07 Client ID: TG07-MW-05-230209												
Naphthalene	19	3.64	23	110		24	140		40-140	4		40
Fluorene	2.7	3.64	5.5	77		5.8	85		40-140	5		40
Phenanthrene	2.0	3.64	4.8	77		5.1	85		40-140	6		40
Anthracene	0.22	3.64	3.1	79		3.4	87		40-140	9		40
Pyrene	0.15	3.64	3.1	81		3.3	87		26-127	6		40
Benzo(a)anthracene	0.05J	3.64	2.5	69		2.7	74		40-140	8		40
Chrysene	0.03J	3.64	2.3	63		2.5	69		40-140	8		40
Benzo(b)fluoranthene	0.03J	3.64	2.0	55		2.2	61		40-140	10		40
Benzo(a)pyrene	0.03J	3.64	2.0	55		2.2	61		40-140	10		40
Indeno(1,2,3-cd)pyrene	0.01J	3.64	1.8	50		2.0	55		40-140	11		40
Benzo(ghi)perylene	ND	3.64	1.7	47		1.8	50		40-140	6		40

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Fluorobiphenyl	77		82		15-120
4-Terphenyl-d14	68		74		41-149
Nitrobenzene-d5	103		108		23-120

Matrix Spike Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-12,14 QC Batch ID: WG1743500-6 WG1743500-7 QC Sample: L2307343-06 Client ID: TG04-MW-03-230209												
Naphthalene	ND	3.64	2.5	69		2.4	66		40-140	4		40
Fluorene	ND	3.64	2.7	74		2.6	72		40-140	4		40
Phenanthrene	ND	3.64	2.5	69		2.4	66		40-140	4		40
Anthracene	ND	3.64	2.8	77		2.7	74		40-140	4		40
Pyrene	ND	3.64	2.8	77		2.8	77		26-127	0		40
Benzo(a)anthracene	ND	3.64	2.8	77		2.7	74		40-140	4		40
Chrysene	ND	3.64	2.5	69		2.5	69		40-140	0		40
Benzo(b)fluoranthene	ND	3.64	2.5	69		2.5	69		40-140	0		40
Benzo(a)pyrene	ND	3.64	2.6	72		2.6	72		40-140	0		40
Indeno(1,2,3-cd)pyrene	ND	3.64	1.3	**36**	Q	1.5	41		40-140	14		40
Benzo(ghi)perylene	ND	3.64	1.1	**30**	Q	1.2	**33**	Q	40-140	9		40

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Fluorobiphenyl	74		72		15-120
4-Terphenyl-d14	78		76		41-149
Nitrobenzene-d5	89		86		23-120

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-01
Client ID: TG07-MW-03-230208
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/08/23 09:55
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:09	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-02
Client ID: TG07-MW-02-230208
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/08/23 10:05
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:15	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-03
Client ID: TG07-MW-01-230208
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/08/23 12:10
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.6628	J	ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:20	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-04
Client ID: TG07-MW-08-230208
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/08/23 12:35
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:25	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2307343
Project Number: P044.001.002
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-05
Client ID: TG07-MW-04-230208
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/08/23 14:40
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:31	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-06
Client ID: TG04-MW-03-230209
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 08:45
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 17:07	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-07
Client ID: TG07-MW-05-230209
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.7672	J	ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 17:13	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-08
Client ID: TG07-MW-05-230209D
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 10:10
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	0.6277	J	ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:36	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-09
Client ID: S-219-230209
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 12:00
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:42	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-10
Client ID: TG04-MW-01-230209
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:47	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-11
Client ID: TG04-MW-01-230209D
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 13:30
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 18:52	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-12
Client ID: FB-230209-1
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 14:06
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 19:17	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

SAMPLE RESULTS

Lab ID: L2307343-14
Client ID: FB-230209-2
Sample Location: 3144 W. PASSYUNK AVE.
Sample Depth:
Matrix: Water

Date Collected: 02/09/23 14:15
Date Received: 02/10/23
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 19:23	EPA 3005A	1,6020B	NTB

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307343
Report Date: 02/17/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-12,14 Batch: WG1743590-1										
Lead, Dissolved	ND		ug/l	1.000	0.3430	1	02/13/23 10:40	02/13/23 16:30	1,6020B	NTB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307343

Report Date: 02/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-12,14 Batch: WG1743590-2								
Lead, Dissolved	97		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-12,14 QC Batch ID: WG1743590-3 WG1743590-4 QC Sample: L2307343-06 Client ID: TG04-MW-03-230209												
Lead, Dissolved	ND	530	508.6	96		523.9	99		75-125	3		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-12,14 QC Batch ID: WG1743590-7 WG1743590-8 QC Sample: L2307343-07 Client ID: TG07-MW-05-230209												
Lead, Dissolved	0.7672J	530	510.8	96		508.3	96		75-125	0		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-01A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-01B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-01C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-01D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-01E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-01F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-01G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-01H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-02A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-02B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-02C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-02D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-02E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-02F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-02G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-02H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-03A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-03B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-03C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-03D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-03E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-03F	Amber 250ml unpreserved	A	9	9	2.1	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-03G	Amber 250ml unpreserved	A	9	9	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-03H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-04A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-04B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-04C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-04D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-04E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-04F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-04G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-04H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-05A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-05B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-05C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-05D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-05E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-05F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-05G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-05H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-06A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-06A1	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06A2	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06B1	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06B2	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06C	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06C1	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06C2	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-06D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-06D1	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-06D2	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-06E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-06E1	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-06E2	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-06F	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06F1	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06F2	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06G	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06G1	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06G2	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-06H	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-06H1	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-06H2	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-07A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07A1	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07A2	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07B1	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07B2	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07C1	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07C2	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-07D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-07D1	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-07D2	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-07E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-07E1	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-07E2	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-07F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07F1	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07F2	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07G1	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07G2	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-07H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-07H1	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-07H2	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-08A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-08B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-08C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-08D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-08E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-08F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-08G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-08H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-09A	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-09B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-09C	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-09D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-09E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-09F	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-09G	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-09H	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-10A	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-10B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-10C	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-10D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-10E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-10F	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-10G	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-10H	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-11A	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-11B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-11C	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-11D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-11E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-11F	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-11G	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-11H	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-12A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-12B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-12C	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-12D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-12E	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-12F	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-12G	Amber 250ml unpreserved	A	7	7	2.1	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-12H	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		PB-6020S-PPB(180)
L2307343-13A	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-13B	Vial HCl preserved	A	NA		2.1	Y	Absent		PA-8260(14)
L2307343-13C	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-13D	Vial Na2S2O3 preserved	A	NA		2.1	Y	Absent		8011(14)
L2307343-14A	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-14B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307343
Report Date: 02/17/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307343-14C	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-14D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-14E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-14F	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-14G	Amber 250ml unpreserved	B	7	7	2.2	Y	Absent		PA-PAHSIM-LVI(7)
L2307343-14H	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		PB-6020S-PPB(180)
L2307343-15A	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-15B	Vial HCl preserved	B	NA		2.2	Y	Absent		PA-8260(14)
L2307343-15C	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)
L2307343-15D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		8011(14)

Container Comments

L2307343-05F cap received cracked, sample is intact

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307343
Project Number:	P044.001.002	**Report Date:**	02/17/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 2/10/23

ALPHA Job #: L2307343

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Princeton, NJ 08540 St. 110
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave.
Project #: P044 001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

EDD @ terraphase.com

Equis EDD

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOC's-5hrst L13+ 1-6	SVOC's-5hrst L13T 1-6	Lead	TOTAL # BOTTLES	Sample Specific Comments
07343-01	TG07-MW-03-230208	2/8/23	9:55	GW	EJ	X	X	X		
02	TG07-MW-02-230208	2/8/23	10:05	GW	KJO	X	X	X		
03	TG-07-MW-01-230208	2/8/23	12:~~05~~ 10 KJO	GW	EJ	X	X	X		
04	TG07-MW-08-230208	2/8/23	12:35	GW	KJO	X	X	X		
	~~TG07-MW-05-230208~~	~~2/8/23~~	~~14:40~~	~~GW~~	~~KJO~~ KJO	X	X	X		
05	TG07-MW-04-230208	2/8/23	14:40	GW	EJ	X	X	X		
06	TG04-MW-03-230209	2/9/23	8:45	GW	EJ	X	X	X		
06	TG04-MW-03-230209MS	2/9/23	8:45	GW	EJ	X	X	X		
06	TG04-MW-03-230209MSD	2/9/23	8:45	GW	EJ	X	X	X		
07	TG07-MW-05-230209	2/9/23	10:10	GW	KJO	X	X	X		

SAMPLE HANDLING

Filtration
☐ Done
☒ Not needed (lead field filtered)
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	2/10/22 14:00	[signature]	2/10/23 900
Paul Mascelli	2/10/23	Paul Mascelli	2/10/23 1640

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 2/10/23

ALPHA Job #: L2307343

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Ste. 110
Princeton, NJ 08540
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave.
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD @terraphase.com
Equis EDD

SAMPLE HANDLING
Filtration
☐ Done
☒ Not needed (Lead)
☐ Lab to do
Preservation (Brew Filtered)
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: VOC's - Short List 1-6	SVOC's-Short List 1-6	Lead	Sample Specific Comments	TOTAL # BOTTLES
07343-07	TG07-MW-05-230209MS	2/9/23	10:10	GW	KJO	Y	X	X		
07	TG07-MW-05-230209MSD	2/9/23	10:10	GW	KJO	X	X	X		
08	TG07-MW-05-230209D	2/9/23	10:10	GW	KJO	X	X	X		
09	S-219-230209	2/9/23	12:00	GW	EJ	X	X	X		
10	TG04-MW-01-230209	2/9/23	13:30	GW	KJO	X	X	X		
11	TG04-MW-01-230209D	2/9/23	13:30	GW	KJO	X	X	X		
12	FB-230209-1	2/9/23	14:06	FB	EJ	X	X	X		
13	TB-230209-1	2/9/23	14:06	TB	EJ	X				
14	FB-230209-2	2/9/23	14:15	FB	KJO	X	X	X		
15	TB-230209-2	2/9/23	14:15	TB	KJO	X				

Container Type																
Preservative																

Relinquished By:	Date/Time	Received By:	Date/Time
Paul Mascella	2/10/23 14:[illegible]	Paul Mascella	2/10/23 [illegible]
Paul Mascella	2/10/23	[illegible]	2/10/23 2030

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2307344
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 100 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	03/09/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307344
Report Date: 03/09/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2307344-01	TG07-MW-07-230209	OIL	3144 W. PASSYUNK AVE.	02/09/23 11:30	02/10/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2307344-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L2307344-01D2: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Saturated Hydrocarbons

L2307344-01: The sample was extracted and then analyzed using a gas chromatograph equipped with a flame ionization detector (GC/FID). The temperature program and associated experimental conditions were optimized to obtain maximum resolution in an eighty minute chromatographic run representative of hydrocarbons in the n-Octane (C8) to n-Tetracontane (C40) range. Qualitative evaluation of the sample was conducted by reviewing the sample chromatogram in conjunction with a chromatogram of a normal alkane series generated with the same chromatographic conditions. Chromatograms of hydrocarbon reference materials obtained from our library of 82 reference standards were also utilized to provide the best possible sample match. Quantitative determination of the sample's hydrocarbon concentration was performed in accordance with EPA Method 8015M. The sample's total hydrocarbon concentration and all associated quality control data are included in the report.

The following qualitative information is based on a tentative interpretation of chromatographic pattern recognition and boiling point ranges:

Total Petroleum Hydrocarbon Identification

L2307344-01 contains hydrocarbons eluting in the range of n-Octane (C8) to after the elution of n-

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

Case Narrative (continued)

Tetracosane (C24). Based on the data generated, L2307344-01 contains a mixture of material eluting in the low and mid weight ranges of the chromatogram. The mixture is a combination of materials similar to Gasoline, weathered Diesel Fuel/Fuel Oil #2, and an unknown discrete peak eluting between n-Nonane (C9) and n-Decane (C10). In an analysis of an undegraded product the n-alkanes are typically the dominant constituents, as seen in the petroleum reference chromatogram. As the product deteriorates, the n-alkanes are preferentially degraded, leaving behind other constituents such as isoprenoids. The analytical testing of the sample identified a pattern of isoprenoids. The level of alkanes and their ratios to the isoprenoids present indicates that the fuel oil has undergone degradation.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 03/09/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D2 Date Collected: 02/09/23 11:30
Client ID: TG07-MW-07-230209 Date Received: 02/10/23
Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:
Matrix: Oil
Analytical Method: 1,8260D
Analytical Date: 02/22/23 14:41
Analyst: RAY
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Isopropylbenzene	47100		mg/kg	1840	172.	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	96		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Oil
Analytical Method: 1,8260D
Analytical Date: 02/22/23 09:54
Analyst: RAY
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	461	68.5	50
Isopentane	488		mg/kg	461	84.4	50
1-Pentene	ND		mg/kg	461	84.2	50
2-Methyl-1-Butene	ND		mg/kg	461	71.7	50
Pentane	917		mg/kg	461	144.	50
trans-2-Pentene	106	J	mg/kg	461	62.3	50
Isoprene	ND		mg/kg	461	82.3	50
cis-2-Pentene	ND		mg/kg	461	74.3	50
Tertiary Butanol	ND		mg/kg	5760	747.	50
2,2-Dimethylbutane	198	J	mg/kg	461	142.	50
4-Methyl-1-pentene	ND		mg/kg	461	71.7	50
Cyclopentane	626		mg/kg	461	120.	50
2,3-Dimethylbutane	1480		mg/kg	461	190.	50
2-Methylpentane	3490		mg/kg	461	125.	50
Methyl tert butyl ether	ND		mg/kg	461	95.0	50
3-Methylpentane	3130		mg/kg	461	73.1	50
1-Hexene	79.3	J	mg/kg	461	64.8	50
n-Hexane	3970		mg/kg	461	75.9	50
Isopropyl Ether	ND		mg/kg	461	55.8	50
trans-2-Hexene	125	J	mg/kg	461	60.2	50
2-Methyl-2-pentene	701		mg/kg	461	70.6	50
cis-2-Hexene	88.8	J	mg/kg	461	62.5	50
Ethyl-Tert-Butyl-Ether	ND		mg/kg	461	69.9	50
2,2-Dimethylpentane	209	J	mg/kg	461	62.0	50
Methylcyclopentane	3310		mg/kg	461	61.8	50
2,4-Dimethylpentane	2190		mg/kg	461	57.0	50
2,2,3-Trimethylbutane	178	J	mg/kg	461	62.3	50
1,2-Dichloroethane	ND		mg/kg	461	68.0	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	239	J	mg/kg	461	85.8	50
Cyclohexane	2320		mg/kg	461	57.0	50
2-Methylhexane	4990		mg/kg	461	72.6	50
Benzene	20200		mg/kg	461	70.3	50
2,3-Dimethylpentane	3460		mg/kg	461	61.1	50
Thiophene	ND		mg/kg	461	65.5	50
1,1-Dimethylcyclopentane	ND		mg/kg	461	55.4	50
3-Methylhexane	5670		mg/kg	461	73.8	50
Tertiary-Amyl Methyl Ether	ND		mg/kg	461	56.7	50
1,3-Dimethylcyclopentane (cis)	1890		mg/kg	461	69.4	50
3-Ethylpentane	568		mg/kg	461	66.6	50
1-Heptene/1,2-DMCP (trans)	3400		mg/kg	922	135.	50
Isooctane	15000		mg/kg	461	50.3	50
trans-3-Heptene	ND		mg/kg	461	71.7	50
Heptane	9050		mg/kg	461	80.2	50
trans-2-Heptene	ND		mg/kg	461	59.0	50
cis-2-Heptene	ND		mg/kg	461	89.2	50
2,2-Dimethylhexane	207	J	mg/kg	461	66.9	50
Methylcyclohexane	11100		mg/kg	461	62.3	50
2,5-Dimethylhexane	4450		mg/kg	461	80.2	50
2,4-Dimethylhexane	3360		mg/kg	461	56.0	50
Ethylcyclopentane	1570		mg/kg	461	61.1	50
2,2,3-Trimethylpentane	1160		mg/kg	461	80.0	50
2,3,4-Trimethylpentane	10500		mg/kg	461	60.2	50
2,3,3-Trimethylpentane	11400		mg/kg	461	91.6	50
2,3-Dimethylhexane	3250		mg/kg	461	112.	50
2-Methylheptane	8260		mg/kg	461	78.0	50
4-Methylheptane	2300		mg/kg	461	79.3	50
3-Methylheptane	4740		mg/kg	461	65.7	50
3-Ethylhexane	870		mg/kg	461	82.6	50
Toluene	12800		mg/kg	461	62.5	50
2-Methylthiophene	ND		mg/kg	461	39.2	50
1,4-Dimethylcyclohexane (trans)	1660		mg/kg	461	60.0	50
3-Methylthiophene	ND		mg/kg	461	54.0	50
1-Octene	ND		mg/kg	1150	70.8	50
Octane	9190		mg/kg	461	54.2	50
1,2-Dimethylcyclohexane (trans)	2170		mg/kg	461	67.8	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	461	73.8	50
cis-2-Octene	ND		mg/kg	461	52.8	50
Isopropylcyclopentane	333	J	mg/kg	461	67.6	50
1,2-Dimethylcyclohexane (cis)	1890		mg/kg	461	134.	50
2,5-Dimethylheptane	3210		mg/kg	461	77.3	50
3,5-Dimethylheptane	582		mg/kg	461	65.0	50
3,3-Dimethylheptane	155	J	mg/kg	461	55.8	50
1,1,4-Trimethylcyclohexane	ND		mg/kg	461	45.9	50
2,3-Dimethylheptane	2950		mg/kg	461	52.6	50
3,4-Dimethylheptane	1250		mg/kg	461	78.4	50
4-Methyloctane	2850		mg/kg	461	77.0	50
2-Methyloctane	3810		mg/kg	461	118.	50
Ethylbenzene	1750		mg/kg	461	49.8	50
2-Ethylthiophene	ND		mg/kg	461	40.6	50
3-Methyloctane	4850		mg/kg	461	51.7	50
3,3-Diethylpentane	ND		mg/kg	461	53.7	50
p/m-Xylene	9960		mg/kg	922	87.9	50
1-Nonene	ND		mg/kg	1150	62.3	50
trans-3-Nonene	ND		mg/kg	461	54.6	50
cis-3-Nonene	ND		mg/kg	461	86.2	50
Nonane (C9)	4990		mg/kg	461	71.7	50
Styrene	ND		mg/kg	461	46.6	50
o-Xylene	2070		mg/kg	461	48.2	50
Xylene (Total)[1]	12000		mg/kg	461	48.2	50
2-Nonene	ND		mg/kg	1150	58.6	50
Isopropylcyclohexane	ND		mg/kg	461	48.9	50
Isopropylbenzene	47400	E	mg/kg	461	43.1	50
3,3-Dimethyloctane	278	J	mg/kg	461	46.6	50
n-Propylbenzene	732		mg/kg	461	40.8	50
2-Methylnonane	3590		mg/kg	461	65.3	50
3-Methylnonane	2520		mg/kg	461	64.3	50
1-Methyl-3-Ethylbenzene	3920		mg/kg	461	72.9	50
1-Methyl-4-Ethylbenzene	2170		mg/kg	461	65.0	50
1,3,5-Trimethylbenzene	3470		mg/kg	461	53.0	50
1-Decene	ND		mg/kg	461	60.0	50
Isobutylcyclohexane	ND		mg/kg	461	37.6	50
1-Methyl-2-Ethylbenzene	2200		mg/kg	461	39.2	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	2540		mg/kg	461	62.5	50
tert-Butylbenzene	106	J	mg/kg	461	48.7	50
1,2,4-Trimethylbenzene	7470		mg/kg	461	47.7	50
Isobutylbenzene	181	J	mg/kg	461	62.3	50
sec-Butylbenzene	304	J	mg/kg	461	59.7	50
1-Methyl-3-Isopropylbenzene	1160		mg/kg	461	59.5	50
1-Methyl-4-Isopropylbenzene	813		mg/kg	461	48.9	50
1,2,3-Trimethylbenzene	2920		mg/kg	461	51.4	50
1-Methyl-2-Isopropylbenzene	219	J	mg/kg	461	50.0	50
Indane	603		mg/kg	461	28.4	50
1,3-Diethylbenzene	949		mg/kg	461	57.4	50
1-Methyl-3-N-Propylbenzene	1860		mg/kg	461	46.6	50
Indene	93.9	J	mg/kg	461	26.8	50
1-Methyl-4-N-Propylbenzene	925		mg/kg	461	57.6	50
n-Butylbenzene	468		mg/kg	461	45.4	50
1,2-Dimethyl-4-Ethylbenzene	2420		mg/kg	461	56.5	50
1,2-Diethylbenzene	481		mg/kg	461	68.3	50
1-Methyl-2-N-Propylbenzene	1240		mg/kg	461	57.4	50
1,4-Dimethyl-2-Ethylbenzene	1740		mg/kg	461	43.1	50
Undecane	1370		mg/kg	461	51.2	50
1,3-Dimethyl-4-Ethylbenzene	2210		mg/kg	461	44.7	50
1,3-Dimethyl-5-Ethylbenzene	2500		mg/kg	461	54.4	50
1,3-Dimethyl-2-Ethylbenzene	372	J	mg/kg	461	34.4	50
1,2-Dimethyl-3-Ethylbenzene	1050		mg/kg	461	29.3	50
1,2,4,5-Tetramethylbenzene	1020		mg/kg	461	35.7	50
1,2,3,5-Tetramethylbenzene	2210		mg/kg	461	35.0	50
N-Pentylbenzene	171	J	mg/kg	461	57.4	50
1,2,3,4-Tetramethylbenzene	1680		mg/kg	461	49.4	50
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	461	65.7	50
Dodecane (C12)	1280		mg/kg	1150	152.	50
1,3,5-Triethylbenzene	ND		mg/kg	461	87.6	50
Naphthalene	1490		mg/kg	461	192.	50
Benzothiophene	ND		mg/kg	461	244.	50
1,2,4-Triethylbenzene	ND		mg/kg	461	78.4	50
Hexylbenzene	164	J	mg/kg	461	88.8	50
MMT	ND		mg/kg	1150	296.	50
Tridecane	588	J	mg/kg	1150	321.	50

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 D
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
2-Methylnaphthalene	2630		mg/kg	1150	305.	50
1-Methylnaphthalene	1320		mg/kg	1150	338.	50
Tetradecane (C14)	174	J	mg/kg	1150	141.	50
Pentadecane	ND		mg/kg	1150	257.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	97		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	105		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					
3-Methyl-1-butene	ND		mg/kg	10.0	1.48
Isopentane	ND		mg/kg	10.0	1.83
1-Pentene	ND		mg/kg	10.0	1.82
2-Methyl-1-Butene	ND		mg/kg	10.0	1.56
Pentane	ND		mg/kg	10.0	3.12
trans-2-Pentene	ND		mg/kg	10.0	1.35
Isoprene	ND		mg/kg	10.0	1.78
cis-2-Pentene	ND		mg/kg	10.0	1.61
Tertiary Butanol	ND		mg/kg	125	16.2
2,2-Dimethylbutane	ND		mg/kg	10.0	3.08
4-Methyl-1-pentene	ND		mg/kg	10.0	1.56
Cyclopentane	ND		mg/kg	10.0	2.60
2,3-Dimethylbutane	ND		mg/kg	10.0	4.13
2-Methylpentane	ND		mg/kg	10.0	2.71
Methyl tert butyl ether	ND		mg/kg	10.0	2.06
3-Methylpentane	ND		mg/kg	10.0	1.58
1-Hexene	ND		mg/kg	10.0	1.40
n-Hexane	ND		mg/kg	10.0	1.64
Isopropyl Ether	ND		mg/kg	10.0	1.21
trans-2-Hexene	ND		mg/kg	10.0	1.30
2-Methyl-2-pentene	ND		mg/kg	10.0	1.53
cis-2-Hexene	ND		mg/kg	10.0	1.36
Ethyl-Tert-Butyl-Ether	ND		mg/kg	10.0	1.52
2,2-Dimethylpentane	ND		mg/kg	10.0	1.34
Methylcyclopentane	ND		mg/kg	10.0	1.34
2,4-Dimethylpentane	ND		mg/kg	10.0	1.24
2,2,3-Trimethylbutane	ND		mg/kg	10.0	1.35
1,2-Dichloroethane	ND		mg/kg	10.0	1.48
3,3-Dimethylpentane	ND		mg/kg	10.0	1.86

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					
Cyclohexane	ND		mg/kg	10.0	1.24
2-Methylhexane	ND		mg/kg	10.0	1.58
Benzene	ND		mg/kg	10.0	1.52
2,3-Dimethylpentane	ND		mg/kg	10.0	1.32
Thiophene	ND		mg/kg	10.0	1.42
1,1-Dimethylcyclopentane	ND		mg/kg	10.0	1.20
3-Methylhexane	ND		mg/kg	10.0	1.60
Tertiary-Amyl Methyl Ether	ND		mg/kg	10.0	1.23
1,3-Dimethylcyclopentane (cis)	ND		mg/kg	10.0	1.50
3-Ethylpentane	ND		mg/kg	10.0	1.44
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	20.0	2.92
Isooctane	ND		mg/kg	10.0	1.09
trans-3-Heptene	ND		mg/kg	10.0	1.56
Heptane	ND		mg/kg	10.0	1.74
trans-2-Heptene	ND		mg/kg	10.0	1.28
cis-2-Heptene	ND		mg/kg	10.0	1.94
2,2-Dimethylhexane	ND		mg/kg	10.0	1.45
Methylcyclohexane	ND		mg/kg	10.0	1.35
2,5-Dimethylhexane	ND		mg/kg	10.0	1.74
2,4-Dimethylhexane	ND		mg/kg	10.0	1.22
Ethylcyclopentane	ND		mg/kg	10.0	1.32
2,2,3-Trimethylpentane	ND		mg/kg	10.0	1.74
2,3,4-Trimethylpentane	ND		mg/kg	10.0	1.30
2,3,3-Trimethylpentane	ND		mg/kg	10.0	1.98
2,3-Dimethylhexane	ND		mg/kg	10.0	2.42
2-Methylheptane	ND		mg/kg	10.0	1.69
4-Methylheptane	ND		mg/kg	10.0	1.72
3-Methylheptane	ND		mg/kg	10.0	1.42
3-Ethylhexane	ND		mg/kg	10.0	1.79

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					
Toluene	ND		mg/kg	10.0	1.36
2-Methylthiophene	ND		mg/kg	10.0	0.850
1,4-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.30
3-Methylthiophene	ND		mg/kg	10.0	1.17
1-Octene	ND		mg/kg	25.0	1.54
Octane	ND		mg/kg	10.0	1.18
1,2-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.47
1,2-Dibromoethane	ND		mg/kg	10.0	1.60
cis-2-Octene	ND		mg/kg	10.0	1.14
Isopropylcyclopentane	ND		mg/kg	10.0	1.46
1,2-Dimethylcyclohexane (cis)	ND		mg/kg	10.0	2.90
2,5-Dimethylheptane	ND		mg/kg	10.0	1.68
3,5-Dimethylheptane	ND		mg/kg	10.0	1.41
3,3-Dimethylheptane	ND		mg/kg	10.0	1.21
1,1,4-Trimethylcyclohexane	ND		mg/kg	10.0	0.995
2,3-Dimethylheptane	ND		mg/kg	10.0	1.14
3,4-Dimethylheptane	ND		mg/kg	10.0	1.70
4-Methyloctane	ND		mg/kg	10.0	1.67
2-Methyloctane	ND		mg/kg	10.0	2.56
Ethylbenzene	ND		mg/kg	10.0	1.08
2-Ethylthiophene	ND		mg/kg	10.0	0.880
3-Methyloctane	ND		mg/kg	10.0	1.12
3,3-Diethylpentane	ND		mg/kg	10.0	1.16
p/m-Xylene	ND		mg/kg	20.0	1.90
1-Nonene	ND		mg/kg	25.0	1.35
trans-3-Nonene	ND		mg/kg	10.0	1.18
cis-3-Nonene	ND		mg/kg	10.0	1.87
Nonane (C9)	ND		mg/kg	10.0	1.56
Styrene	ND		mg/kg	10.0	1.01

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					
o-Xylene	ND		mg/kg	10.0	1.04
Xylene (Total)[1]	ND		mg/kg	10.0	1.04
2-Nonene	ND		mg/kg	25.0	1.27
Isopropylcyclohexane	ND		mg/kg	10.0	1.06
Isopropylbenzene	ND		mg/kg	10.0	0.935
3,3-Dimethyloctane	ND		mg/kg	10.0	1.01
n-Propylbenzene	ND		mg/kg	10.0	0.885
2-Methylnonane	ND		mg/kg	10.0	1.42
3-Methylnonane	ND		mg/kg	10.0	1.40
1-Methyl-3-Ethylbenzene	ND		mg/kg	10.0	1.58
1-Methyl-4-Ethylbenzene	ND		mg/kg	10.0	1.41
1,3,5-Trimethylbenzene	ND		mg/kg	10.0	1.15
1-Decene	ND		mg/kg	10.0	1.30
Isobutylcyclohexane	ND		mg/kg	10.0	0.815
1-Methyl-2-Ethylbenzene	ND		mg/kg	10.0	0.850
Decane (C10)	ND		mg/kg	10.0	1.36
tert-Butylbenzene	ND		mg/kg	10.0	1.06
1,2,4-Trimethylbenzene	ND		mg/kg	10.0	1.04
Isobutylbenzene	ND		mg/kg	10.0	1.35
sec-Butylbenzene	ND		mg/kg	10.0	1.30
1-Methyl-3-Isopropylbenzene	ND		mg/kg	10.0	1.29
1-Methyl-4-Isopropylbenzene	ND		mg/kg	10.0	1.06
1,2,3-Trimethylbenzene	ND		mg/kg	10.0	1.12
1-Methyl-2-Isopropylbenzene	ND		mg/kg	10.0	1.08
Indane	ND		mg/kg	10.0	0.615
1,3-Diethylbenzene	ND		mg/kg	10.0	1.24
1-Methyl-3-N-Propylbenzene	ND		mg/kg	10.0	1.01
Indene	ND		mg/kg	10.0	0.580
1-Methyl-4-N-Propylbenzene	ND		mg/kg	10.0	1.25

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					
n-Butylbenzene	ND		mg/kg	10.0	0.985
1,2-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	1.22
1,2-Diethylbenzene	ND		mg/kg	10.0	1.48
1-Methyl-2-N-Propylbenzene	ND		mg/kg	10.0	1.24
1,4-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.935
Undecane	ND		mg/kg	10.0	1.11
1,3-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	0.970
1,3-Dimethyl-5-Ethylbenzene	ND		mg/kg	10.0	1.18
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.745
1,2-Dimethyl-3-Ethylbenzene	ND		mg/kg	10.0	0.635
1,2,4,5-Tetramethylbenzene	ND		mg/kg	10.0	0.775
1,2,3,5-Tetramethylbenzene	ND		mg/kg	10.0	0.760
N-Pentylbenzene	ND		mg/kg	10.0	1.24
1,2,3,4-Tetramethylbenzene	ND		mg/kg	10.0	1.07
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	10.0	1.42
Dodecane (C12)	ND		mg/kg	25.0	3.28
1,3,5-Triethylbenzene	ND		mg/kg	10.0	1.90
Naphthalene	ND		mg/kg	10.0	4.18
Benzothiophene	ND		mg/kg	10.0	5.28
1,2,4-Triethylbenzene	ND		mg/kg	10.0	1.70
Hexylbenzene	ND		mg/kg	10.0	1.92
MMT	ND		mg/kg	25.0	6.43
Tridecane	ND		mg/kg	25.0	6.96
2-Methylnaphthalene	ND		mg/kg	25.0	6.61
1-Methylnaphthalene	ND		mg/kg	25.0	7.34
Tetradecane (C14)	ND		mg/kg	25.0	3.06
Pentadecane	ND		mg/kg	25.0	5.58

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/20/23 22:27
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1747696-6					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	100		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1747696-3 WG1747696-4								
1-Pentene	84		83		50-130	1		30
Pentane	89		88		50-130	1		30
Tertiary Butanol	107		102		50-130	5		30
Cyclopentane	94		94		50-130	0		30
2-Methylpentane	98		95		50-130	3		30
Methyl tert butyl ether	94		96		50-130	2		30
3-Methylpentane	102		101		50-130	1		30
1-Hexene	104		102		50-130	2		30
n-Hexane	87		84		50-130	4		30
Isopropyl Ether	98		97		50-130	1		30
Ethyl-Tert-Butyl-Ether	96		94		50-130	2		30
Methylcyclopentane	101		99		50-130	2		30
2,4-Dimethylpentane	99		99		50-130	0		30
Cyclohexane	105		104		50-130	1		30
2-Methylhexane	102		100		50-130	2		30
Benzene	99		97		50-130	2		30
2,3-Dimethylpentane	103		101		50-130	2		30
3-Methylhexane	91		91		50-130	0		30
Tertiary-Amyl Methyl Ether	88		88		50-130	0		30
Isooctane	99		98		50-130	1		30
Heptane	103		100		50-130	3		30
Methylcyclohexane	103		101		50-130	2		30
2-Methylheptane	101		99		50-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1747696-3 WG1747696-4								
3-Methylheptane	99		100		50-130	1		30
Toluene	100		100		50-130	0		30
Octane	101		100		50-130	1		30
Ethylbenzene	96		96		50-130	0		30
p/m-Xylene	100		100		50-130	0		30
Nonane (C9)	89		89		50-130	0		30
o-Xylene	99		100		50-130	1		30
Isopropylbenzene	99		99		50-130	0		30
n-Propylbenzene	99		100		50-130	1		30
1-Methyl-3-Ethylbenzene	97		98		50-130	1		30
1-Methyl-4-Ethylbenzene	101		102		50-130	1		30
1,3,5-Trimethylbenzene	98		99		50-130	1		30
1-Decene	77		78		50-130	1		30
1-Methyl-2-Ethylbenzene	99		100		50-130	1		30
Decane (C10)	92		92		50-130	0		30
1,2,4-Trimethylbenzene	93		94		50-130	1		30
sec-Butylbenzene	101		102		50-130	1		30
1-Methyl-4-N-Propylbenzene	92		92		50-130	0		30
n-Butylbenzene	92		94		50-130	2		30
1,2-Diethylbenzene	92		93		50-130	1		30
Undecane	88		89		50-130	1		30
N-Pentylbenzene	92		93		50-130	1		30
Dodecane (C12)	107		107		50-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307344
Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1747696-3 WG1747696-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	99		99		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	100		100		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 21:15
Analyst: DP
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab						
Tetraethyl Lead	1.04		mg/kg	0.977	0.300	1
Tetramethyl Lead	ND		mg/kg	0.977	0.300	1
Trimethyl Ethyl Lead	ND		mg/kg	0.977	0.300	1
Diethyl Dimethyl Lead	ND		mg/kg	0.977	0.300	1
Methyl Triethyl Lead	ND		mg/kg	0.977	0.300	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 21:16
Analyst: CNC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Naphthalene	1220		mg/kg	2.69	0.774	1
C1-Naphthalenes	2080		mg/kg	2.69	0.774	1
C2-Naphthalenes	2570		mg/kg	2.69	0.774	1
C3-Naphthalenes	1890		mg/kg	2.69	0.774	1
C4-Naphthalenes	1050		mg/kg	2.69	0.774	1
2-Methylnaphthalene	1910		mg/kg	2.69	0.694	1
1-Methylnaphthalene	1020		mg/kg	2.69	0.848	1
Biphenyl	130		mg/kg	2.69	0.832	1
2,6-Dimethylnaphthalene	1260		mg/kg	2.69	0.640	1
Dibenzofuran	51.8		mg/kg	2.69	0.848	1
Acenaphthylene	12.7		mg/kg	2.69	0.514	1
Acenaphthene	48.0		mg/kg	2.69	0.475	1
2,3,5-Trimethylnaphthalene	181		mg/kg	2.69	0.440	1
Fluorene	86.5		mg/kg	2.69	0.718	1
C1-Fluorenes	235		mg/kg	2.69	0.718	1
C2-Fluorenes	348		mg/kg	2.69	0.718	1
C3-Fluorenes	262		mg/kg	2.69	0.718	1
Dibenzothiophene	72.7		mg/kg	2.69	0.742	1
C1-Dibenzothiophenes BS	222		mg/kg	2.69	0.742	1
C2-Dibenzothiophenes	303		mg/kg	2.69	0.742	1
C3-Dibenzothiophenes	175		mg/kg	2.69	0.742	1
C4-Dibenzothiophenes	64.7		mg/kg	2.69	0.742	1
Phenanthrene	172		mg/kg	2.69	0.892	1
C1-Phenanthrenes/Anthracenes	318		mg/kg	2.69	0.892	1
C2-Phenanthrenes/Anthr BS	292		mg/kg	2.69	0.892	1
C3-Phenanthrenes/Anthracenes	131		mg/kg	2.69	0.892	1
C4-Phenanthrenes/Anthracenes	43.5		mg/kg	2.69	0.892	1
Retene	ND		mg/kg	2.69	0.661	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 Date Collected: 02/09/23 11:30

Client ID: TG07-MW-07-230209 Date Received: 02/10/23

Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Anthracene	24.1		mg/kg	2.69	0.555	1
Carbazole	9.55		mg/kg	2.69	0.881	1
Fluoranthene	28.4		mg/kg	2.69	0.856	1
Benzo(b)fluorene	4.36		mg/kg	2.69	0.780	1
Pyrene	28.8		mg/kg	2.69	0.708	1
C1-Fluoranthenes/Pyrenes	30.4		mg/kg	2.69	0.708	1
C2-Fluoranthenes/Pyrenes	21.5		mg/kg	2.69	0.708	1
C3-Fluoranthenes/Pyrenes	15.8		mg/kg	2.69	0.708	1
C4-Fluoranthenes/Pyrenes	9.51		mg/kg	2.69	0.708	1
Benz(a)anthracene	9.08		mg/kg	2.69	0.549	1
Chrysene/Triphenylene	8.77		mg/kg	2.69	0.544	1
C1-Chrysenes	8.00		mg/kg	2.69	0.544	1
C2-Chrysenes BS	8.61		mg/kg	2.69	0.544	1
C3-Chrysenes	9.15		mg/kg	2.69	0.544	1
C4-Chrysenes	6.22		mg/kg	2.69	0.544	1
Benzo(b)fluoranthene	5.36		mg/kg	2.69	0.700	1
Benzo(j)+(k)fluoranthene	4.44		mg/kg	2.69	0.534	1
Benzo(a)fluoranthene	1.54	J	mg/kg	2.69	0.534	1
Benzo(e)pyrene	4.48		mg/kg	2.69	0.556	1
Benzo(a)pyrene	6.16		mg/kg	2.69	0.769	1
Perylene	1.78	J	mg/kg	2.69	0.520	1
Indeno(1,2,3-cd)pyrene	3.42		mg/kg	2.69	0.731	1
Dibenz(a,h)+(a,c)anthracene	1.56	J	mg/kg	2.69	0.727	1
Benzo(g,h,i)perylene	3.60		mg/kg	2.69	0.715	1
Hopane (T19)	3.87		mg/kg	2.69	0.766	1
C23 Tricyclic Terpane (T4)	7.81		mg/kg	2.69	0.766	1
C24 Tricyclic Terpane (T5)	2.95		mg/kg	2.69	0.766	1
C25 Tricyclic Terpane (T6)	2.27	J	mg/kg	2.69	0.766	1
C24 Tetracyclic Terpane (T6a)	ND		mg/kg	2.69	0.766	1
C26 Tricyclic Terpane-22S (T6b)	0.974	J	mg/kg	2.69	0.766	1
C26 Tricyclic Terpane-22R (T6c)	ND		mg/kg	2.69	0.766	1
C28 Tricyclic Terpane-22S (T7)	ND		mg/kg	2.69	0.766	1
C28 Tricyclic Terpane-22R (T8)	ND		mg/kg	2.69	0.766	1
C29 Tricyclic Terpane-22S (T9)	ND		mg/kg	2.69	0.766	1
C29 Tricyclic Terpane-22R (T10)	0.850	J	mg/kg	2.69	0.766	1
18a-22,29,30-Trisnorneohopane-TS (T11)	1.29	J	mg/kg	2.69	0.766	1
C30 Tricyclic Terpane-22S	0.852	J	mg/kg	2.69	0.766	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 Date Collected: 02/09/23 11:30

Client ID: TG07-MW-07-230209 Date Received: 02/10/23

Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
C30 Tricyclic Terpane-22R	0.907	J	mg/kg	2.69	0.766	1
17a(H)-22,29,30-Trisnorhopane-TM (T12)	1.88	J	mg/kg	2.69	0.766	1
17a/b,21b/a 28,30-Bisnorhopane (T14a)	ND		mg/kg	2.69	0.766	1
17a(H),21b(H)-25-Norhopane (T14b)	ND		mg/kg	2.69	0.766	1
30-Norhopane (T15)	3.47		mg/kg	2.69	0.766	1
18a(H)-30-Norneohopane-C29Ts (T16)	ND		mg/kg	2.69	0.766	1
17a(H)-Diahopane (X)	ND		mg/kg	2.69	0.766	1
30-Normoretane (T17)	ND		mg/kg	2.69	0.766	1
18a(H)&18b(H)-Oleananes (T18)	1.14	J	mg/kg	2.69	0.766	1
Moretane (T20)	3.00	G	mg/kg	2.69	0.766	1
30-Homohopane-22S (T21)	1.68	J	mg/kg	2.69	0.766	1
30-Homohopane-22R (T22)	1.24	J	mg/kg	2.69	0.766	1
30,31-Bishomohopane-22S (T26)	3.59	G	mg/kg	2.69	0.766	1
30,31-Bishomohopane-22R (T27)	1.01	J	mg/kg	2.69	0.766	1
30,31-Trishomohopane-22S (T30)	ND		mg/kg	2.69	0.766	1
30,31-Trishomohopane-22R (T31)	ND		mg/kg	2.69	0.766	1
Tetrakishomohopane-22S (T32)	3.64		mg/kg	2.69	0.766	1
Tetrakishomohopane-22R (T33)	ND		mg/kg	2.69	0.766	1
Pentakishomohopane-22S (T34)	ND		mg/kg	2.69	0.766	1
Pentakishomohopane-22R (T35)	ND		mg/kg	2.69	0.766	1
13b(H),17a(H)-20S-Diacholestane (S4)	1.43	J	mg/kg	2.69	0.598	1
13b(H),17a(H)-20R-Diacholestane (S5)	0.973	J	mg/kg	2.69	0.598	1
13b,17a-20S-Methyldiacholestane (S8)	0.756	J	mg/kg	2.69	0.598	1
17a(H)20SC27/C29dia	1.31	J	mg/kg	2.69	0.598	1
17a(H)20RC27/C29dia	1.67	J	mg/kg	2.69	0.598	1
Unknown Sterane (S18)	ND		mg/kg	2.69	0.598	1
13a,17b-20S-Ethyldiacholestane (S19)	ND		mg/kg	2.69	0.598	1
14a,17a-20S-Methylcholestane (S20)	0.962	J	mg/kg	2.69	0.598	1
14a,17a-20R-Methylcholestane (S24)	1.14	J	mg/kg	2.69	0.598	1
14a(H),17a(H)-20S-Ethylcholestane (S25)	1.10	J	mg/kg	2.69	0.598	1
14a(H),17a(H)-20R-Ethylcholestane (S28)	1.03	J	mg/kg	2.69	0.598	1
14b(H),17b(H)-20R-Cholestane (S14)	1.37	J	mg/kg	2.69	0.598	1
14b(H),17b(H)-20S-Cholestane (S15)	1.29	J	mg/kg	2.69	0.598	1
14b,17b-20R-Methylcholestane (S22)	1.25	J	mg/kg	2.69	0.598	1
14b,17b-20S-Methylcholestane (S23)	1.39	J	mg/kg	2.69	0.598	1
14b(H),17b(H)-20R-Ethylcholestane (S26)	1.66	J	mg/kg	2.69	0.598	1
14b(H),17b(H)-20S-Ethylcholestane (S27)	0.834	J	mg/kg	2.69	0.598	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 Date Collected: 02/09/23 11:30

Client ID: TG07-MW-07-230209 Date Received: 02/10/23

Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
C26,20R+C27,20S TAS	2.29	J	mg/kg	2.69	0.598	1
C28,20S TAS	1.37	J	mg/kg	2.69	0.598	1
C27,20R TAS	1.80	J	mg/kg	2.69	0.598	1
C28,20R TAS	0.984	J	mg/kg	2.69	0.598	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	102		50-130
Phenanthrene-d10	94		50-130
Benzo(a)pyrene-d12	130		50-130
5B(H)Cholane-Surr	103		50-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 16:48
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	0.993	J	mg/kg	3.00	0.862
C3-Naphthalenes	0.967	J	mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 16:48
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
Carbazole	ND		mg/kg	3.00	0.981
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	0.984	J	mg/kg	3.00	0.619
Benzo(a)pyrene	0.893	J	mg/kg	3.00	0.856
Perylene	1.09	J	mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	1.23	J	mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	0.819	J	mg/kg	3.00	0.810
Benzo(g,h,i)perylene	1.45	J	mg/kg	3.00	0.797
Hopane (T19)	ND		mg/kg	3.00	0.854
C23 Tricyclic Terpane (T4)	ND		mg/kg	3.00	0.854
C24 Tricyclic Terpane (T5)	ND		mg/kg	3.00	0.854
C25 Tricyclic Terpane (T6)	ND		mg/kg	3.00	0.854
C24 Tetracyclic Terpane (T6a)	ND		mg/kg	3.00	0.854
C26 Tricyclic Terpane-22S (T6b)	ND		mg/kg	3.00	0.854

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 16:48
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
C26 Tricyclic Terpane-22R (T6c)	ND		mg/kg	3.00	0.854
C28 Tricyclic Terpane-22S (T7)	ND		mg/kg	3.00	0.854
C28 Tricyclic Terpane-22R (T8)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22S (T9)	ND		mg/kg	3.00	0.854
C29 Tricyclic Terpane-22R (T10)	ND		mg/kg	3.00	0.854
18a-22,29,30-Trisnorneohopane-TS (T11)	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22S	ND		mg/kg	3.00	0.854
C30 Tricyclic Terpane-22R	ND		mg/kg	3.00	0.854
17a(H)-22,29,30-Trisnorhopane-TM (T12)	ND		mg/kg	3.00	0.854
17a/b,21b/a 28,30-Bisnorhopane (T14a)	ND		mg/kg	3.00	0.854
17a(H),21b(H)-25-Norhopane (T14b)	ND		mg/kg	3.00	0.854
30-Norhopane (T15)	ND		mg/kg	3.00	0.854
18a(H)-30-Norneohopane-C29Ts (T16)	ND		mg/kg	3.00	0.854
17a(H)-Diahopane (X)	ND		mg/kg	3.00	0.854
30-Normoretane (T17)	ND		mg/kg	3.00	0.854
18a(H)&18b(H)-Oleananes (T18)	ND		mg/kg	3.00	0.854
Moretane (T20)	ND		mg/kg	3.00	0.854
30-Homohopane-22S (T21)	ND		mg/kg	3.00	0.854
30-Homohopane-22R (T22)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22S (T26)	ND		mg/kg	3.00	0.854
30,31-Bishomohopane-22R (T27)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22S (T30)	ND		mg/kg	3.00	0.854
30,31-Trishomohopane-22R (T31)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22S (T32)	ND		mg/kg	3.00	0.854
Tetrakishomohopane-22R (T33)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22S (T34)	ND		mg/kg	3.00	0.854
Pentakishomohopane-22R (T35)	ND		mg/kg	3.00	0.854
13b(H),17a(H)-20S-Diacholestane (S4)	ND		mg/kg	3.00	0.666
13b(H),17a(H)-20R-Diacholestane (S5)	ND		mg/kg	3.00	0.666

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 16:48
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
13b,17a-20S-Methyldiacholestane (S8)	ND		mg/kg	3.00	0.666
17a(H)20SC27/C29dia	ND		mg/kg	3.00	0.666
17a(H)20RC27/C29dia	ND		mg/kg	3.00	0.666
Unknown Sterane (S18)	ND		mg/kg	3.00	0.666
13a,17b-20S-Ethyldiacholestane (S19)	ND		mg/kg	3.00	0.666
14a,17a-20S-Methylcholestane (S20)	ND		mg/kg	3.00	0.666
14a,17a-20R-Methylcholestane (S24)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20S-Ethylcholestane (S25)	ND		mg/kg	3.00	0.666
14a(H),17a(H)-20R-Ethylcholestane (S28)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Cholestane (S14)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Cholestane (S15)	ND		mg/kg	3.00	0.666
14b,17b-20R-Methylcholestane (S22)	ND		mg/kg	3.00	0.666
14b,17b-20S-Methylcholestane (S23)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20R-Ethylcholestane (S26)	ND		mg/kg	3.00	0.666
14b(H),17b(H)-20S-Ethylcholestane (S27)	ND		mg/kg	3.00	0.666
C26,20R+C27,20S TAS	ND		mg/kg	3.00	0.666
C28,20S TAS	ND		mg/kg	3.00	0.666
C27,20R TAS	ND		mg/kg	3.00	0.666
C28,20R TAS	ND		mg/kg	3.00	0.666

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	91		50-130
Phenanthrene-d10	93		50-130
Benzo(a)pyrene-d12	124		50-130
5B(H)Cholane-Surr	101		50-130

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/20/23 19:01
Analyst: DP

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:51

Parameter	Result	Qualifier	Units	RL	MDL
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab for sample(s): 01 Batch: WG1746428-1					
Tetraethyl Lead	ND		mg/kg	1.00	0.307
Tetramethyl Lead	ND		mg/kg	1.00	0.307
Trimethyl Ethyl Lead	ND		mg/kg	1.00	0.307
Diethyl Dimethyl Lead	ND		mg/kg	1.00	0.307
Methyl Triethyl Lead	ND		mg/kg	1.00	0.307

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1746426-2 WG1746426-3								
Naphthalene	92		96		50-130	4		30
2-Methylnaphthalene	90		93		50-130	3		30
Acenaphthylene	92		96		50-130	4		30
Acenaphthene	91		96		50-130	5		30
Fluorene	93		98		50-130	5		30
Phenanthrene	92		96		50-130	4		30
Anthracene	94		97		50-130	3		30
Fluoranthene	75		76		50-130	1		30
Pyrene	78		80		50-130	3		30
Benz(a)anthracene	98		102		50-130	4		30
Chrysene/Triphenylene	95		98		50-130	3		30
Benzo(b)fluoranthene	105		109		50-130	4		30
Benzo(j)+(k)fluoranthene	100		103		50-130	3		30
Benzo(a)pyrene	103		106		50-130	3		30
Indeno(1,2,3-cd)pyrene	111		110		50-130	1		30
Dibenz(a,h)+(a,c)anthracene	107		111		50-130	4		30
Benzo(g,h,i)perylene	108		112		50-130	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1746426-2 WG1746426-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	93		95		50-130
Phenanthrene-d10	92		95		50-130
Benzo(a)pyrene-d12	123		125		50-130
5B(H)Cholane-Surr	98		97		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG1746428-2 WG1746428-3								
Tetraethyl Lead	102		100		50-130	2		30

PETROLEUM HYDROCARBONS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.

Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Oil
Analytical Method: 1,8015D(M)
Analytical Date: 02/21/23 07:32
Analyst: WR
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	6140		mg/kg	180	53.3	1
n-Decane (C10)	3100		mg/kg	180	57.3	1
n-Undecane (C11)	2400		mg/kg	180	53.6	1
n-Dodecane (C12)	2250		mg/kg	180	39.1	1
n-Tridecane (C13)	1150		mg/kg	180	49.3	1
2,6,10-Trimethyldodecane (1380)	1800		mg/kg	180	27.0	1
n-Tetradecane (C14)	500		mg/kg	180	27.0	1
2,6,10-Trimethyltridecane (1470)	2330		mg/kg	180	21.4	1
n-Pentadecane (C15)	752		mg/kg	180	21.4	1
n-Hexadecane (C16)	336		mg/kg	180	27.0	1
Norpristane (1650)	1430		mg/kg	180	59.2	1
n-Heptadecane (C17)	76.3	J	mg/kg	180	59.2	1
Pristane	3000		mg/kg	180	38.3	1
n-Octadecane (C18)	ND		mg/kg	180	36.0	1
Phytane	1110		mg/kg	180	22.5	1
n-Nonadecane (C19)	109	J	mg/kg	180	46.1	1
n-Eicosane (C20)	ND		mg/kg	180	25.4	1
n-Heneicosane (C21)	47.2	J	mg/kg	180	21.5	1
n-Docosane (C22)	21.2	J	mg/kg	180	18.7	1
n-Tricosane (C23)	ND		mg/kg	180	22.8	1
n-Tetracosane (C24)	ND		mg/kg	180	30.0	1
n-Pentacosane (C25)	154	JC	mg/kg	180	95.0	1
n-Hexacosane (C26)	ND		mg/kg	180	26.4	1
n-Heptacosane (C27)	ND		mg/kg	180	21.6	1
n-Octacosane (C28)	ND		mg/kg	180	38.5	1
n-Nonacosane (C29)	ND		mg/kg	180	120.	1
n-Triacontane (C30)	ND		mg/kg	180	20.6	1
n-Hentriacontane (C31)	ND		mg/kg	180	25.4	1

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01 Date Collected: 02/09/23 11:30

Client ID: TG07-MW-07-230209 Date Received: 02/10/23

Sample Location: 3144 W. PASSYUNK AVE. Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	180	22.6	1
n-Tritriacontane (C33)	ND		mg/kg	180	25.3	1
n-Tetratriacontane (C34)	ND		mg/kg	180	28.6	1
n-Pentatriacontane (C35)	ND		mg/kg	180	31.3	1
n-Hexatriacontane (C36)	ND		mg/kg	180	35.7	1
n-Heptatriacontane (C37)	ND		mg/kg	180	39.9	1
n-Octatriacontane (C38)	ND		mg/kg	180	41.8	1
n-Nonatriacontane (C39)	ND		mg/kg	180	58.3	1
n-Tetracontane (C40)	ND		mg/kg	180	58.3	1
Total Petroleum Hydrocarbons (C9-C44)	619000		mg/kg	5920	1300	1
Total Saturated Hydrocarbons	26700	J	mg/kg	180	18.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	99		50-130
d50-Tetracosane	100		50-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2307344

Project Number: P044.001.002 **Report Date:** 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/20/23 22:32
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
n-Nonane (C9)	ND		mg/kg	200	59.3
n-Decane (C10)	ND		mg/kg	200	63.8
n-Undecane (C11)	ND		mg/kg	200	59.7
n-Dodecane (C12)	ND		mg/kg	200	43.6
n-Tridecane (C13)	ND		mg/kg	200	54.9
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	200	30.1
n-Tetradecane (C14)	ND		mg/kg	200	30.1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	200	23.9
n-Pentadecane (C15)	ND		mg/kg	200	23.9
n-Hexadecane (C16)	ND		mg/kg	200	30.1
Norpristane (1650)	ND		mg/kg	200	66.0
n-Heptadecane (C17)	ND		mg/kg	200	66.0
Pristane	ND		mg/kg	200	42.7
n-Octadecane (C18)	44.4	J	mg/kg	200	40.1
Phytane	ND		mg/kg	200	25.1
n-Nonadecane (C19)	ND		mg/kg	200	51.4
n-Eicosane (C20)	ND		mg/kg	200	28.3
n-Heneicosane (C21)	ND		mg/kg	200	23.9
n-Docosane (C22)	ND		mg/kg	200	20.9
n-Tricosane (C23)	ND		mg/kg	200	25.4
n-Tetracosane (C24)	ND		mg/kg	200	33.5
n-Pentacosane (C25)	127	JC	mg/kg	200	106.
n-Hexacosane (C26)	ND		mg/kg	200	29.4
n-Heptacosane (C27)	ND		mg/kg	200	24.1
n-Octacosane (C28)	83.8	JC	mg/kg	200	42.9
n-Nonacosane (C29)	ND		mg/kg	200	133.
n-Triacontane (C30)	ND		mg/kg	200	22.9
n-Hentriacontane (C31)	ND		mg/kg	200	28.3
n-Dotriacontane (C32)	ND		mg/kg	200	25.2

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/20/23 22:32
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 02/20/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1746426-1					
n-Tritriacontane (C33)	ND		mg/kg	200	28.1
n-Tetratriacontane (C34)	ND		mg/kg	200	31.8
n-Pentatriacontane (C35)	ND		mg/kg	200	34.9
n-Hexatriacontane (C36)	ND		mg/kg	200	39.8
n-Heptatriacontane (C37)	ND		mg/kg	200	44.4
n-Octatriacontane (C38)	ND		mg/kg	200	46.6
n-Nonatriacontane (C39)	ND		mg/kg	200	64.9
n-Tetracontane (C40)	ND		mg/kg	200	64.9
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	6600	1450
Total Saturated Hydrocarbons	255	J	mg/kg	200	20.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	99		50-130
d50-Tetracosane	99		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307344
Report Date: 03/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1746426-2 WG1746426-3								
Nonane (C9)	93		96		50-130	3		30
n-Decane (C10)	88		90		50-130	2		30
n-Dodecane (C12)	79		83		50-130	5		30
n-Tetradecane (C14)	91		94		50-130	3		30
n-Hexadecane (C16)	105		108		50-130	3		30
n-Octadecane (C18)	108		112		50-130	4		30
n-Nonadecane (C19)	96		100		50-130	4		30
n-Eicosane (C20)	97		101		50-130	4		30
n-Docosane (C22)	101		105		50-130	4		30
n-Tetracosane (C24)	103		106		50-130	3		30
n-Hexacosane (C26)	101		105		50-130	4		30
n-Octacosane (C28)	106		104		50-130	2		30
n-Triacontane (C30)	100		104		50-130	4		30
n-Hexatriacontane (C36)	92		96		50-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	99		101		50-130
d50-Tetracosane	99		102		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

SAMPLE RESULTS

Lab ID: L2307344-01
Client ID: TG07-MW-07-230209
Sample Location: 3144 W. PASSYUNK AVE.
Date Collected: 02/09/23 11:30
Date Received: 02/10/23
Field Prep: None

Sample Depth:
Matrix: Oil
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Density	0.823		g/ml	0.001	NA	1	-	02/20/23 00:00	121,2520C	ALL

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2307344
Report Date: 03/09/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01 Batch: WG1746427-1										
Density	1.00		g/ml	0.001	NA	1	-	02/20/23 00:00	121,2520C	ALL

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2307344

Report Date: 03/09/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1746427-2 QC Sample: L2302915-01 Client ID: DUP Sample						
Density	0.821	0.820	g/ml	0		10

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2307344
Report Date: 03/09/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2307344-01A	Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		A2-ORGLEAD(365),A2-SHC(365),A2-ALKPAH/BIOMARKER(365)
L2307344-01B	Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		A2-DENSITY-2520C(365)
L2307344-01C	Vial unpreserved 20ml hard-cap	A	NA		2.1	Y	Absent		A2-PIANO8260(365)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2307344
Project Number:	P044.001.002	**Report Date:**	03/09/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 2/11/23

ALPHA Job #: L2307544

Client Information

Client: Terraphase Engineering
Address: 100 Canal Pointe Blvd. Suite 110
Princeton, NJ 08540
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery
Project Location: 3144 Passyunk Ave.
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
Equis EDD

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pkg VOCs - 5260D	Organic Lead - 5270 Fc (m.o.)	Alk'y Total PAHs + Benzothiophenes	Saturated Hydrocarbons	Density	PHI / qualitative naphthalene	SAMPLE HANDLING	TOTAL # BOTTLES
07344-01	TGT-MW-07-230209	2/9/23	11:30	NAPL/S	KJO	X	X	X	X	X	X	Low sample volume	

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
Monique ADL 2-11-23 12:26			
[signature]	2/10/22 1400	[signature]	2/10/23 1600
Paul Mascella	2/10/23	Paul Mascella	2/10/23 1600
[signature] ADL	2/10/23 2220	[signature]	2/10/23 2220

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

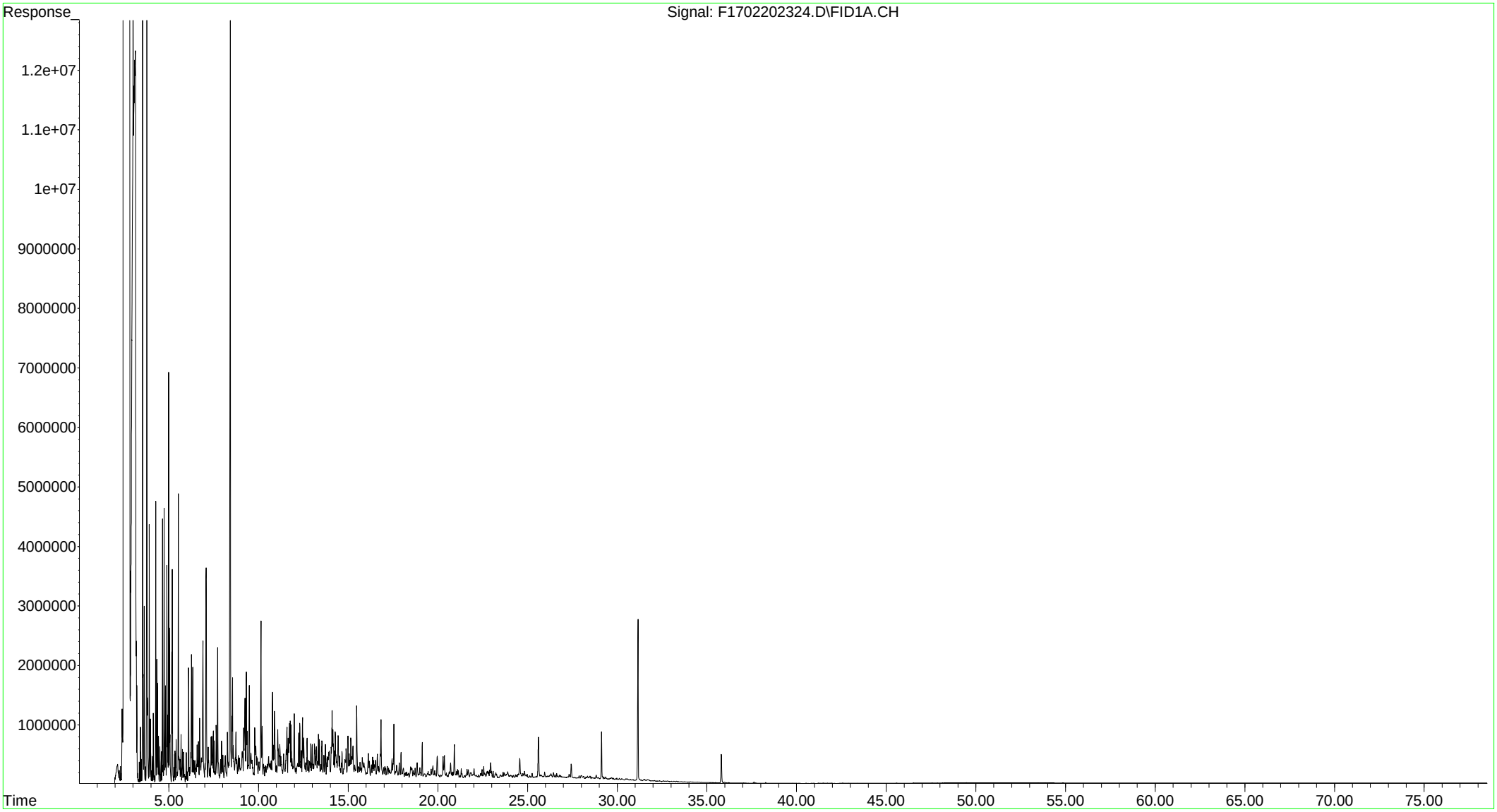
[signature] 2/11/23 13:19

[signature] ADL 2/11/23 13:19

[signature] 2/11/23 12:36

GC-FID Chromatogram

File :O:\Forensics\Data\FID17\2023\FEB\FEB20\F1702202324.D
Operator : FID17:WR
Acquired : 21 Feb 2023 7:32 am using AcqMethod FID17A.M
Instrument : FID17
Sample Name: l2307344-01,42,,,r2f
Misc Info : WG1746613,WG1746426,ICAL19667
Vial Number: 12



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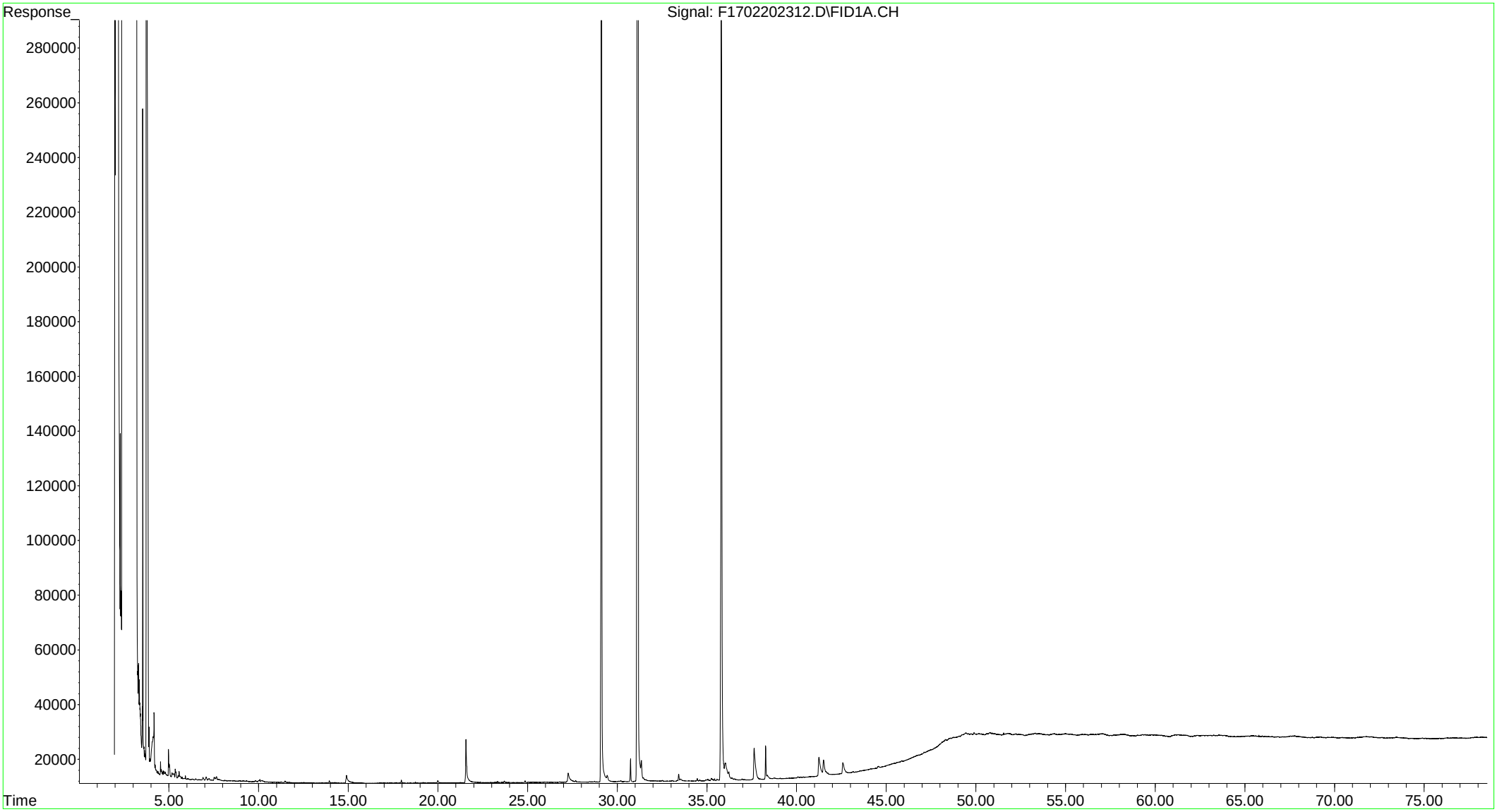
Acquired : 20 Feb 2023 10:32 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: WG1746426-1,42,,
Misc Info : WG1746613,WG1746426,ICAL19667
Vial Number: 6



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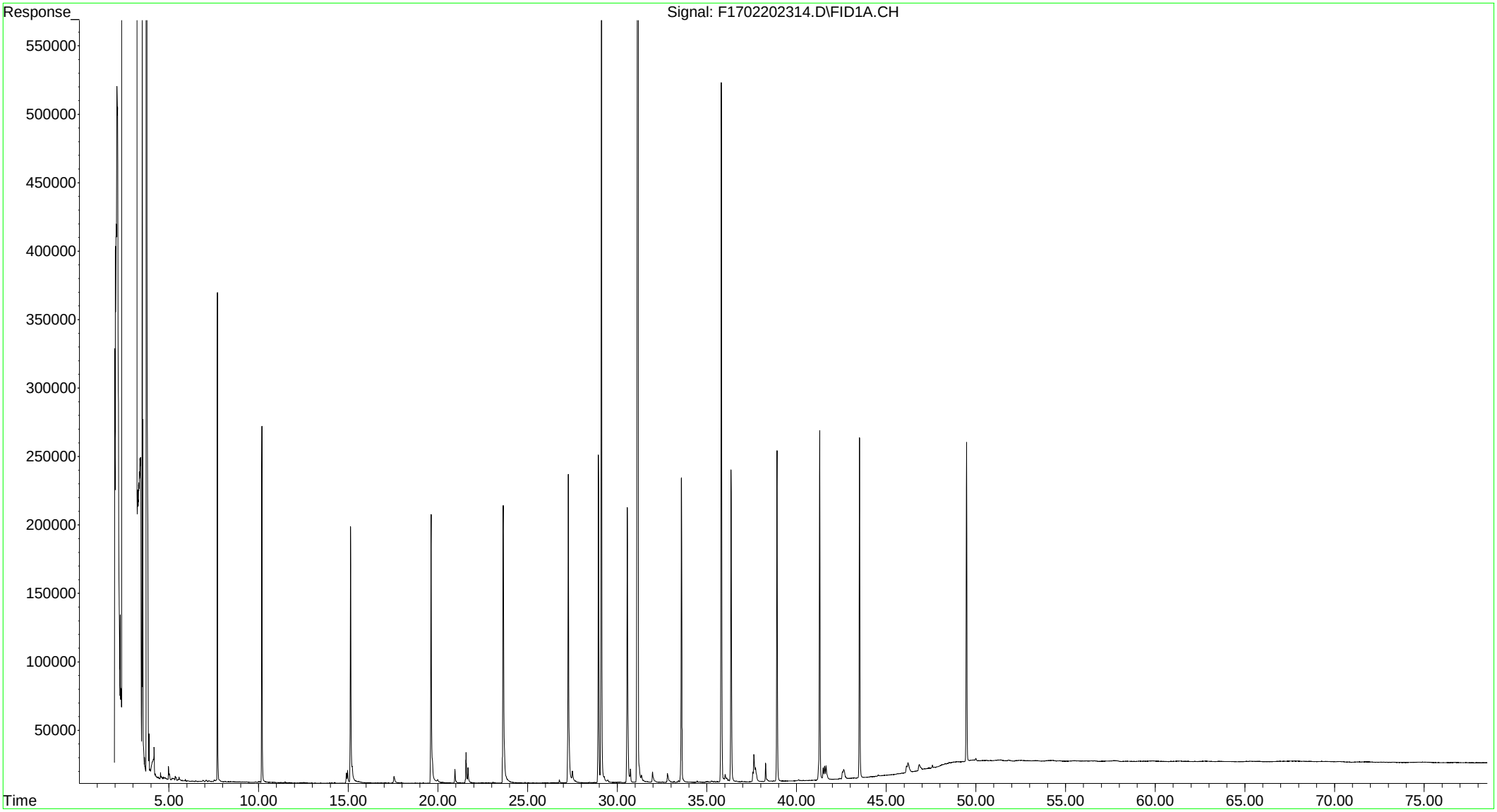
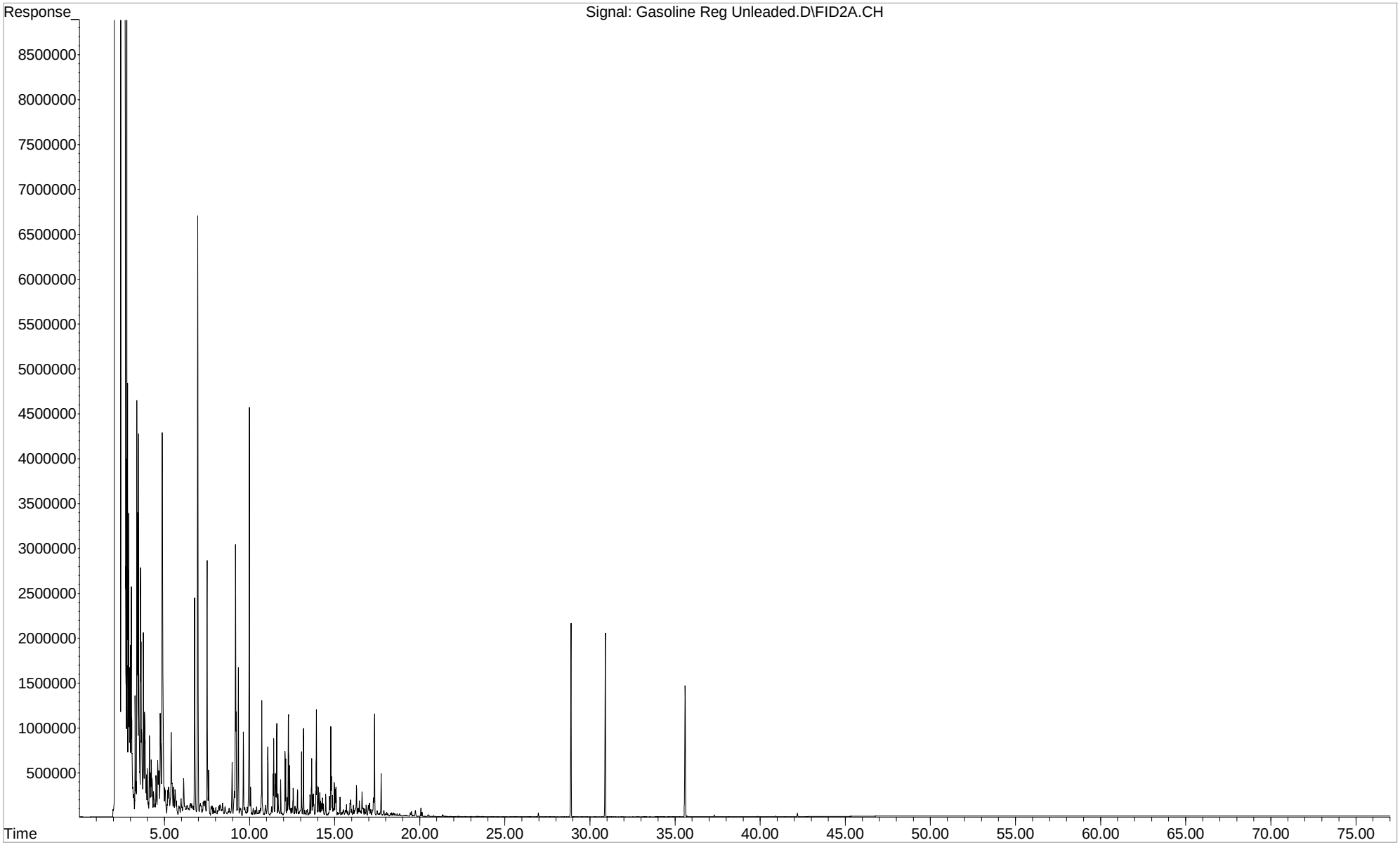
Acquired : 21 Feb 2023 12:02 am using AcqMethod FID17A.M
Instrument : FID17
Sample Name: WG1746426-2,42,,
Misc Info : WG1746613,WG1746426,ICAL19667
Vial Number: 7



Petroleum Reference Standards

File :O:\Forensics\Data\LIBRARY\Hydrocarbon Reference Standards\Ga
... soline Reg Unleaded.D
Operator : PAH2:AC
Instrument : PAH 2
Acquired : 19 Nov 2011 8:47 am using AcqMethod FRNC2AF.M
Sample Name: Gasoline Regular Unleaded
Misc Info : F050410I



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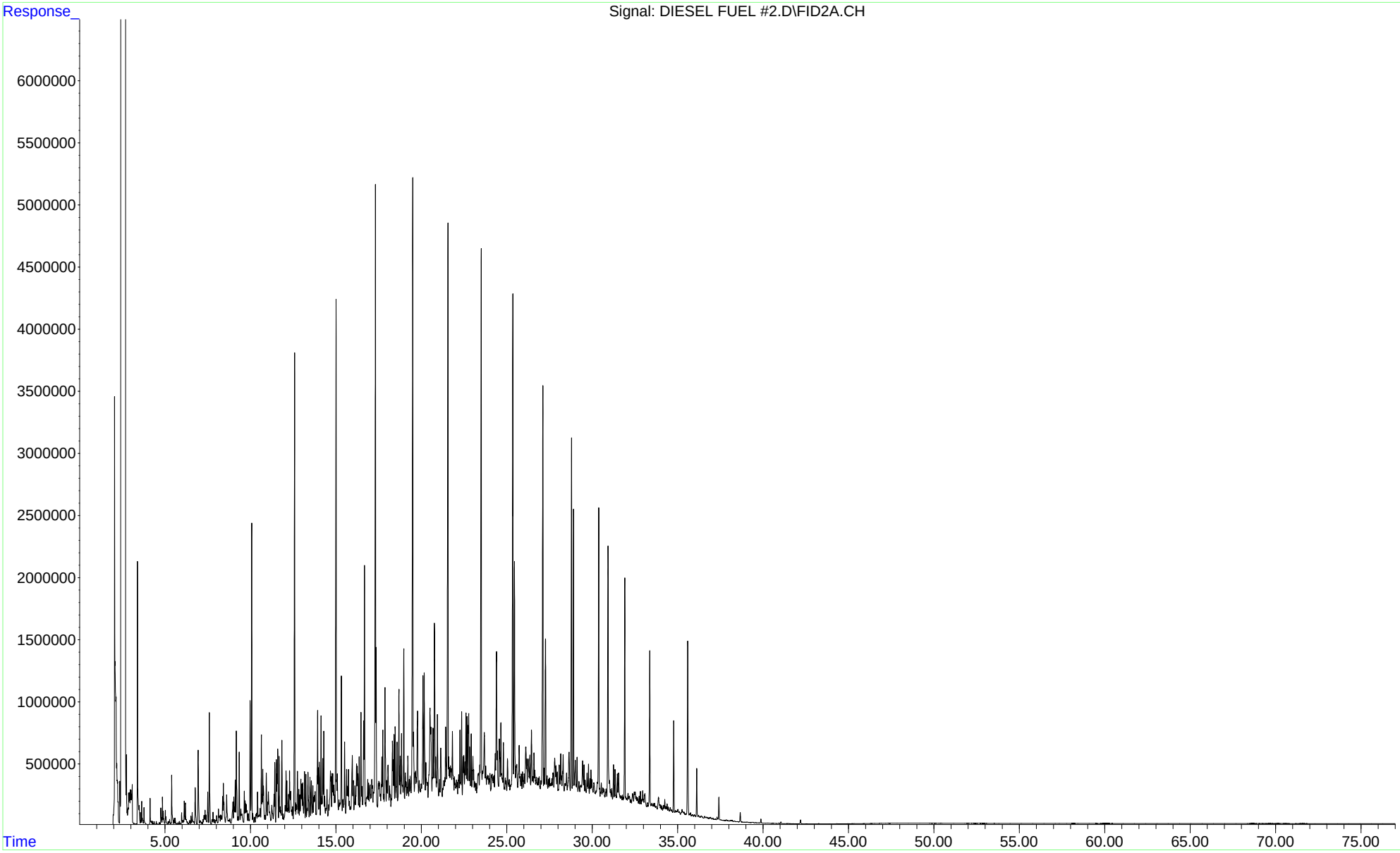
File       :O:\FORENSICS\LIBRARY\HYDROCARBON REFERENCE STANDARDS\DIESEL
...         FUEL #2.D
Operator  : PAH2:AC
Instrument :   PAH 2
Acquired  : 18 Nov 2011   8:19 pm using AcqMethod FRNC2AF.M
Sample    : #2 DIESEL FUEL
Misc Info : F050410A
```



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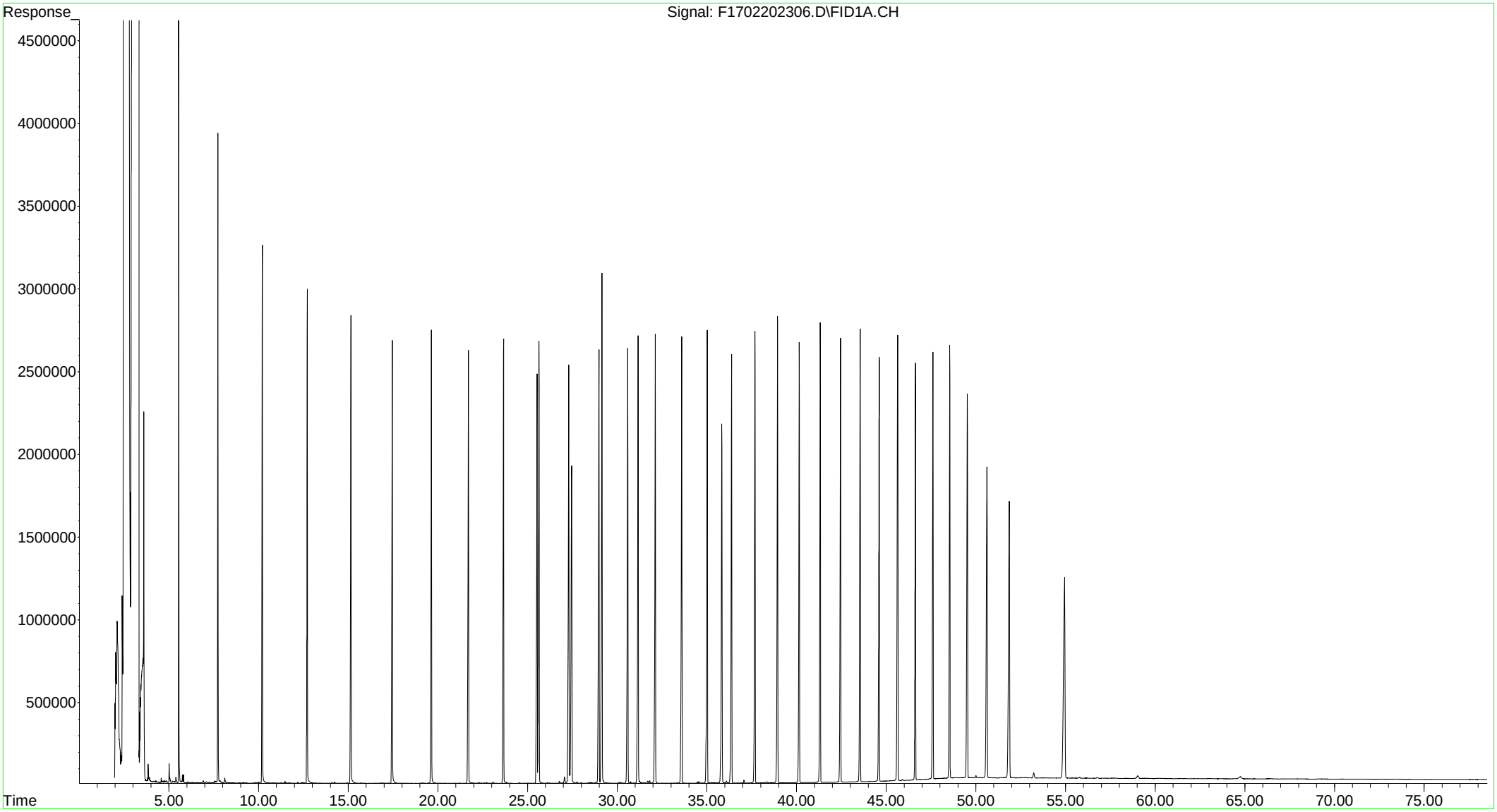
Operator : FID17:WR
Acquired : 20 Feb 2023 6:01 pm using AcqMethod FID17A.M
Instrument : FID17
Sample Name: WG1746613-1
Misc Info : WG1746613,FRBF60,ICAL19667
Vial Number: 3



ANALYTICAL REPORT

Lab Number:	L2402156
Client:	Aquaterra Technologies, Inc. 901 South Bolmar St. Suite A West Chester, PA 19382
ATTN:	Joseph Roberts
Phone:	(419) 297-4151
Project Name:	Not Specified
Project Number:	Not Specified
Report Date:	02/08/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (99110) , NJ (MA015), NY (11627), NC (685), OH (CL106), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2402156-01	PH B-150-LNAPL-2023.12.05	OIL	Not Specified	12/05/23 13:00	01/12/24

Project Name:	Not Specified	**Lab Number:**	L2402156
Project Number:	Not Specified	**Report Date:**	02/08/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2402156-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L2402156-01D2: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 02/08/24

ORGANICS

VOLATILES

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D2
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8260D
Analytical Date: 02/02/24 12:55
Analyst: RAY
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Benzene	134000		mg/kg	3870	590.	400
Toluene	85900		mg/kg	3870	524.	400
Isopropylbenzene	175000		mg/kg	3870	362.	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	89		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8260D
Analytical Date: 02/02/24 04:26
Analyst: RAY
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	484	71.8	50
Isopentane	152	J	mg/kg	484	88.5	50
1-Pentene	ND		mg/kg	484	88.2	50
2-Methyl-1-Butene	ND		mg/kg	484	75.2	50
Pentane	273	J	mg/kg	484	151.	50
trans-2-Pentene	ND		mg/kg	484	65.3	50
Isoprene	ND		mg/kg	484	86.3	50
cis-2-Pentene	ND		mg/kg	484	77.8	50
Tertiary Butanol	ND		mg/kg	6040	783.	50
2,2-Dimethylbutane	ND		mg/kg	484	149.	50
4-Methyl-1-pentene	ND		mg/kg	484	75.2	50
Cyclopentane	446	J	mg/kg	484	125.	50
2,3-Dimethylbutane	278	J	mg/kg	484	200.	50
2-Methylpentane	1360		mg/kg	484	131.	50
Methyl tert butyl ether	ND		mg/kg	484	99.6	50
3-Methylpentane	1420		mg/kg	484	76.6	50
1-Hexene	ND		mg/kg	484	67.9	50
n-Hexane	2220		mg/kg	484	79.5	50
Isopropyl Ether	ND		mg/kg	484	58.5	50
trans-2-Hexene	ND		mg/kg	484	63.1	50
2-Methyl-2-pentene	114	J	mg/kg	484	74.0	50
cis-2-Hexene	ND		mg/kg	484	65.5	50
Ethyl-Tert-Butyl-Ether	ND		mg/kg	484	73.2	50
2,2-Dimethylpentane	182	J	mg/kg	484	65.0	50
Methylcyclopentane	2130		mg/kg	484	64.8	50
2,4-Dimethylpentane	284	J	mg/kg	484	59.7	50
2,2,3-Trimethylbutane	ND		mg/kg	484	65.3	50
1,2-Dichloroethane	ND		mg/kg	484	71.3	50

Project Name: Not Specified **Lab Number:** L2402156

Project Number: Not Specified **Report Date:** 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	231	J	mg/kg	484	89.9	50
Cyclohexane	878		mg/kg	484	59.7	50
2-Methylhexane	2210		mg/kg	484	76.2	50
Benzene	172000	E	mg/kg	484	73.7	50
2,3-Dimethylpentane	899		mg/kg	484	64.1	50
Thiophene	ND		mg/kg	484	68.7	50
1,1-Dimethylcyclopentane	ND		mg/kg	484	58.0	50
3-Methylhexane	2660		mg/kg	484	77.4	50
Tertiary-Amyl Methyl Ether	ND		mg/kg	484	59.5	50
1,3-Dimethylcyclopentane (cis)	563		mg/kg	484	72.8	50
3-Ethylpentane	278	J	mg/kg	484	69.9	50
1-Heptene/1,2-DMCP (trans)	638	J	mg/kg	967	141.	50
Isooctane	ND		mg/kg	484	52.7	50
trans-3-Heptene	ND		mg/kg	484	75.2	50
Heptane	2580		mg/kg	484	84.1	50
trans-2-Heptene	ND		mg/kg	484	61.9	50
cis-2-Heptene	ND		mg/kg	484	93.6	50
2,2-Dimethylhexane	71.1	J	mg/kg	484	70.1	50
Methylcyclohexane	1650		mg/kg	484	65.3	50
2,5-Dimethylhexane	184	J	mg/kg	484	84.1	50
2,4-Dimethylhexane	282	J	mg/kg	484	58.8	50
Ethylcyclopentane	319	J	mg/kg	484	64.1	50
2,2,3-Trimethylpentane	ND		mg/kg	484	83.9	50
2,3,4-Trimethylpentane	ND		mg/kg	484	63.1	50
2,3,3-Trimethylpentane	ND		mg/kg	484	96.0	50
2,3-Dimethylhexane	185	J	mg/kg	484	117.	50
2-Methylheptane	946		mg/kg	484	81.7	50
4-Methylheptane	308	J	mg/kg	484	83.2	50
3-Methylheptane	866		mg/kg	484	68.9	50
3-Ethylhexane	ND		mg/kg	484	86.6	50
Toluene	100000	E	mg/kg	484	65.5	50
2-Methylthiophene	ND		mg/kg	484	41.1	50
1,4-Dimethylcyclohexane (trans)	210	J	mg/kg	484	62.9	50
3-Methylthiophene	ND		mg/kg	484	56.6	50
1-Octene	ND		mg/kg	1210	74.2	50
Octane	855		mg/kg	484	56.8	50
1,2-Dimethylcyclohexane (trans)	227	J	mg/kg	484	71.1	50

Project Name: Not Specified **Lab Number:** L2402156

Project Number: Not Specified **Report Date:** 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	484	77.4	50
cis-2-Octene	ND		mg/kg	484	55.4	50
Isopropylcyclopentane	ND		mg/kg	484	70.8	50
1,2-Dimethylcyclohexane (cis)	ND		mg/kg	484	140.	50
2,5-Dimethylheptane	444	J	mg/kg	484	81.0	50
3,5-Dimethylheptane	89.9	J	mg/kg	484	68.2	50
3,3-Dimethylheptane	ND		mg/kg	484	58.5	50
1,1,4-Trimethylcyclohexane	ND		mg/kg	484	48.1	50
2,3-Dimethylheptane	234	J	mg/kg	484	55.1	50
3,4-Dimethylheptane	ND		mg/kg	484	82.2	50
4-Methyloctane	214	J	mg/kg	484	80.8	50
2-Methyloctane	223	J	mg/kg	484	124.	50
Ethylbenzene	2340		mg/kg	484	52.2	50
2-Ethylthiophene	ND		mg/kg	484	42.6	50
3-Methyloctane	333	J	mg/kg	484	54.2	50
3,3-Diethylpentane	ND		mg/kg	484	56.3	50
p/m-Xylene	8880		mg/kg	967	92.1	50
1-Nonene	ND		mg/kg	1210	65.3	50
trans-3-Nonene	ND		mg/kg	484	57.3	50
cis-3-Nonene	ND		mg/kg	484	90.4	50
Nonane (C9)	350	J	mg/kg	484	75.2	50
Styrene	ND		mg/kg	484	48.8	50
o-Xylene	1870		mg/kg	484	50.5	50
Xylene (Total)[1]	10800		mg/kg	484	50.5	50
2-Nonene	ND		mg/kg	1210	61.4	50
Isopropylcyclohexane	ND		mg/kg	484	51.2	50
Isopropylbenzene	206000	E	mg/kg	484	45.2	50
3,3-Dimethyloctane	ND		mg/kg	484	48.8	50
n-Propylbenzene	1410		mg/kg	484	42.8	50
2-Methylnonane	ND		mg/kg	484	68.4	50
3-Methylnonane	105	J	mg/kg	484	67.4	50
1-Methyl-3-Ethylbenzene	412	J	mg/kg	484	76.4	50
1-Methyl-4-Ethylbenzene	250	J	mg/kg	484	68.2	50
1,3,5-Trimethylbenzene	313	J	mg/kg	484	55.6	50
1-Decene	ND		mg/kg	484	62.9	50
Isobutylcyclohexane	ND		mg/kg	484	39.4	50
1-Methyl-2-Ethylbenzene	202	J	mg/kg	484	41.1	50

Project Name: Not Specified **Lab Number:** L2402156

Project Number: Not Specified **Report Date:** 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	245	J	mg/kg	484	65.5	50
tert-Butylbenzene	867		mg/kg	484	51.0	50
1,2,4-Trimethylbenzene	836		mg/kg	484	50.0	50
Isobutylbenzene	ND		mg/kg	484	65.3	50
sec-Butylbenzene	921		mg/kg	484	62.6	50
1-Methyl-3-Isopropylbenzene	1670		mg/kg	484	62.4	50
1-Methyl-4-Isopropylbenzene	2240		mg/kg	484	51.2	50
1,2,3-Trimethylbenzene	290	J	mg/kg	484	53.9	50
1-Methyl-2-Isopropylbenzene	1930		mg/kg	484	52.5	50
Indane	98.2	J	mg/kg	484	29.7	50
1,3-Diethylbenzene	66.5	J	mg/kg	484	60.2	50
1-Methyl-3-N-Propylbenzene	138	J	mg/kg	484	48.8	50
Indene	ND		mg/kg	484	28.0	50
1-Methyl-4-N-Propylbenzene	81.5	J	mg/kg	484	60.4	50
n-Butylbenzene	48.6	J	mg/kg	484	47.6	50
1,2-Dimethyl-4-Ethylbenzene	169	J	mg/kg	484	59.2	50
1,2-Diethylbenzene	ND		mg/kg	484	71.6	50
1-Methyl-2-N-Propylbenzene	89.7	J	mg/kg	484	60.2	50
1,4-Dimethyl-2-Ethylbenzene	125	J	mg/kg	484	45.2	50
Undecane	264	J	mg/kg	484	53.7	50
1,3-Dimethyl-4-Ethylbenzene	166	J	mg/kg	484	46.9	50
1,3-Dimethyl-5-Ethylbenzene	196	J	mg/kg	484	57.0	50
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	484	36.0	50
1,2-Dimethyl-3-Ethylbenzene	77.4	J	mg/kg	484	30.7	50
1,2,4,5-Tetramethylbenzene	100	J	mg/kg	484	37.5	50
1,2,3,5-Tetramethylbenzene	ND		mg/kg	484	36.8	50
N-Pentylbenzene	ND		mg/kg	484	60.2	50
1,2,3,4-Tetramethylbenzene	ND		mg/kg	484	51.7	50
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	484	68.9	50
Dodecane (C12)	328	J	mg/kg	1210	159.	50
1,3,5-Triethylbenzene	ND		mg/kg	484	91.9	50
Naphthalene	344	J	mg/kg	484	202.	50
Benzothiophene	ND		mg/kg	484	256.	50
1,2,4-Triethylbenzene	ND		mg/kg	484	82.2	50
Hexylbenzene	ND		mg/kg	484	93.1	50
MMT	ND		mg/kg	1210	312.	50
Tridecane	ND		mg/kg	1210	336.	50

Project Name: Not Specified **Lab Number:** L2402156

Project Number: Not Specified **Report Date:** 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01 D
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
2-Methylnaphthalene	ND		mg/kg	1210	319.	50
1-Methylnaphthalene	ND		mg/kg	1210	355.	50
Tetradecane (C14)	ND		mg/kg	1210	148.	50
Pentadecane	ND		mg/kg	1210	271.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	92		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					
3-Methyl-1-butene	ND		mg/kg	10.0	1.48
Isopentane	ND		mg/kg	10.0	1.83
1-Pentene	ND		mg/kg	10.0	1.82
2-Methyl-1-Butene	ND		mg/kg	10.0	1.56
Pentane	ND		mg/kg	10.0	3.12
trans-2-Pentene	ND		mg/kg	10.0	1.35
Isoprene	ND		mg/kg	10.0	1.78
cis-2-Pentene	ND		mg/kg	10.0	1.61
Tertiary Butanol	ND		mg/kg	125	16.2
2,2-Dimethylbutane	ND		mg/kg	10.0	3.08
4-Methyl-1-pentene	ND		mg/kg	10.0	1.56
Cyclopentane	ND		mg/kg	10.0	2.60
2,3-Dimethylbutane	ND		mg/kg	10.0	4.13
2-Methylpentane	ND		mg/kg	10.0	2.71
Methyl tert butyl ether	ND		mg/kg	10.0	2.06
3-Methylpentane	ND		mg/kg	10.0	1.58
1-Hexene	ND		mg/kg	10.0	1.40
n-Hexane	ND		mg/kg	10.0	1.64
Isopropyl Ether	ND		mg/kg	10.0	1.21
trans-2-Hexene	ND		mg/kg	10.0	1.30
2-Methyl-2-pentene	ND		mg/kg	10.0	1.53
cis-2-Hexene	ND		mg/kg	10.0	1.36
Ethyl-Tert-Butyl-Ether	ND		mg/kg	10.0	1.52
2,2-Dimethylpentane	ND		mg/kg	10.0	1.34
Methylcyclopentane	ND		mg/kg	10.0	1.34
2,4-Dimethylpentane	ND		mg/kg	10.0	1.24
2,2,3-Trimethylbutane	ND		mg/kg	10.0	1.35
1,2-Dichloroethane	ND		mg/kg	10.0	1.48
3,3-Dimethylpentane	ND		mg/kg	10.0	1.86

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					
Cyclohexane	ND		mg/kg	10.0	1.24
2-Methylhexane	ND		mg/kg	10.0	1.58
Benzene	ND		mg/kg	10.0	1.52
2,3-Dimethylpentane	ND		mg/kg	10.0	1.32
Thiophene	ND		mg/kg	10.0	1.42
1,1-Dimethylcyclopentane	ND		mg/kg	10.0	1.20
3-Methylhexane	ND		mg/kg	10.0	1.60
Tertiary-Amyl Methyl Ether	ND		mg/kg	10.0	1.23
1,3-Dimethylcyclopentane (cis)	ND		mg/kg	10.0	1.50
3-Ethylpentane	ND		mg/kg	10.0	1.44
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	20.0	2.92
Isooctane	ND		mg/kg	10.0	1.09
trans-3-Heptene	ND		mg/kg	10.0	1.56
Heptane	ND		mg/kg	10.0	1.74
trans-2-Heptene	ND		mg/kg	10.0	1.28
cis-2-Heptene	ND		mg/kg	10.0	1.94
2,2-Dimethylhexane	ND		mg/kg	10.0	1.45
Methylcyclohexane	ND		mg/kg	10.0	1.35
2,5-Dimethylhexane	ND		mg/kg	10.0	1.74
2,4-Dimethylhexane	ND		mg/kg	10.0	1.22
Ethylcyclopentane	ND		mg/kg	10.0	1.32
2,2,3-Trimethylpentane	ND		mg/kg	10.0	1.74
2,3,4-Trimethylpentane	ND		mg/kg	10.0	1.30
2,3,3-Trimethylpentane	ND		mg/kg	10.0	1.98
2,3-Dimethylhexane	ND		mg/kg	10.0	2.42
2-Methylheptane	ND		mg/kg	10.0	1.69
4-Methylheptane	ND		mg/kg	10.0	1.72
3-Methylheptane	ND		mg/kg	10.0	1.42
3-Ethylhexane	ND		mg/kg	10.0	1.79

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					
Toluene	ND		mg/kg	10.0	1.36
2-Methylthiophene	ND		mg/kg	10.0	0.850
1,4-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.30
3-Methylthiophene	ND		mg/kg	10.0	1.17
1-Octene	ND		mg/kg	25.0	1.54
Octane	ND		mg/kg	10.0	1.18
1,2-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.47
1,2-Dibromoethane	ND		mg/kg	10.0	1.60
cis-2-Octene	ND		mg/kg	10.0	1.14
Isopropylcyclopentane	ND		mg/kg	10.0	1.46
1,2-Dimethylcyclohexane (cis)	ND		mg/kg	10.0	2.90
2,5-Dimethylheptane	ND		mg/kg	10.0	1.68
3,5-Dimethylheptane	ND		mg/kg	10.0	1.41
3,3-Dimethylheptane	ND		mg/kg	10.0	1.21
1,1,4-Trimethylcyclohexane	ND		mg/kg	10.0	0.995
2,3-Dimethylheptane	ND		mg/kg	10.0	1.14
3,4-Dimethylheptane	ND		mg/kg	10.0	1.70
4-Methyloctane	ND		mg/kg	10.0	1.67
2-Methyloctane	ND		mg/kg	10.0	2.56
Ethylbenzene	ND		mg/kg	10.0	1.08
2-Ethylthiophene	ND		mg/kg	10.0	0.880
3-Methyloctane	ND		mg/kg	10.0	1.12
3,3-Diethylpentane	ND		mg/kg	10.0	1.16
p/m-Xylene	ND		mg/kg	20.0	1.90
1-Nonene	ND		mg/kg	25.0	1.35
trans-3-Nonene	ND		mg/kg	10.0	1.18
cis-3-Nonene	ND		mg/kg	10.0	1.87
Nonane (C9)	ND		mg/kg	10.0	1.56
Styrene	ND		mg/kg	10.0	1.01

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					
o-Xylene	ND		mg/kg	10.0	1.04
Xylene (Total)[1]	ND		mg/kg	10.0	1.04
2-Nonene	ND		mg/kg	25.0	1.27
Isopropylcyclohexane	ND		mg/kg	10.0	1.06
Isopropylbenzene	ND		mg/kg	10.0	0.935
3,3-Dimethyloctane	ND		mg/kg	10.0	1.01
n-Propylbenzene	ND		mg/kg	10.0	0.885
2-Methylnonane	ND		mg/kg	10.0	1.42
3-Methylnonane	ND		mg/kg	10.0	1.40
1-Methyl-3-Ethylbenzene	ND		mg/kg	10.0	1.58
1-Methyl-4-Ethylbenzene	ND		mg/kg	10.0	1.41
1,3,5-Trimethylbenzene	ND		mg/kg	10.0	1.15
1-Decene	ND		mg/kg	10.0	1.30
Isobutylcyclohexane	ND		mg/kg	10.0	0.815
1-Methyl-2-Ethylbenzene	ND		mg/kg	10.0	0.850
Decane (C10)	ND		mg/kg	10.0	1.36
tert-Butylbenzene	ND		mg/kg	10.0	1.06
1,2,4-Trimethylbenzene	ND		mg/kg	10.0	1.04
Isobutylbenzene	ND		mg/kg	10.0	1.35
sec-Butylbenzene	ND		mg/kg	10.0	1.30
1-Methyl-3-Isopropylbenzene	ND		mg/kg	10.0	1.29
1-Methyl-4-Isopropylbenzene	ND		mg/kg	10.0	1.06
1,2,3-Trimethylbenzene	ND		mg/kg	10.0	1.12
1-Methyl-2-Isopropylbenzene	ND		mg/kg	10.0	1.08
Indane	ND		mg/kg	10.0	0.615
1,3-Diethylbenzene	ND		mg/kg	10.0	1.24
1-Methyl-3-N-Propylbenzene	ND		mg/kg	10.0	1.01
Indene	ND		mg/kg	10.0	0.580
1-Methyl-4-N-Propylbenzene	ND		mg/kg	10.0	1.25

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					
n-Butylbenzene	ND		mg/kg	10.0	0.985
1,2-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	1.22
1,2-Diethylbenzene	ND		mg/kg	10.0	1.48
1-Methyl-2-N-Propylbenzene	ND		mg/kg	10.0	1.24
1,4-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.935
Undecane	ND		mg/kg	10.0	1.11
1,3-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	0.970
1,3-Dimethyl-5-Ethylbenzene	ND		mg/kg	10.0	1.18
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.745
1,2-Dimethyl-3-Ethylbenzene	ND		mg/kg	10.0	0.635
1,2,4,5-Tetramethylbenzene	ND		mg/kg	10.0	0.775
1,2,3,5-Tetramethylbenzene	ND		mg/kg	10.0	0.760
N-Pentylbenzene	ND		mg/kg	10.0	1.24
1,2,3,4-Tetramethylbenzene	ND		mg/kg	10.0	1.07
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	10.0	1.42
Dodecane (C12)	ND		mg/kg	25.0	3.28
1,3,5-Triethylbenzene	ND		mg/kg	10.0	1.90
Naphthalene	ND		mg/kg	10.0	4.18
Benzothiophene	ND		mg/kg	10.0	5.30
1,2,4-Triethylbenzene	ND		mg/kg	10.0	1.70
Hexylbenzene	ND		mg/kg	10.0	1.92
MMT	ND		mg/kg	25.0	6.45
Tridecane	ND		mg/kg	25.0	6.95
2-Methylnaphthalene	ND		mg/kg	25.0	6.60
1-Methylnaphthalene	ND		mg/kg	25.0	7.35
Tetradecane (C14)	ND		mg/kg	25.0	3.06
Pentadecane	ND		mg/kg	25.0	5.60

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 02/01/24 19:58
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1880638-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1880638-3 WG1880638-4								
1-Pentene	81		82		50-130	1		30
Pentane	88		88		50-130	0		30
Tertiary Butanol	100		101		50-130	1		30
Cyclopentane	96		95		50-130	1		30
2-Methylpentane	90		98		50-130	9		30
Methyl tert butyl ether	96		97		50-130	1		30
3-Methylpentane	98		103		50-130	5		30
1-Hexene	99		107		50-130	8		30
n-Hexane	90		94		50-130	4		30
Isopropyl Ether	93		100		50-130	7		30
Ethyl-Tert-Butyl-Ether	92		98		50-130	6		30
Methylcyclopentane	99		104		50-130	5		30
2,4-Dimethylpentane	101		106		50-130	5		30
Cyclohexane	104		105		50-130	1		30
2-Methylhexane	100		100		50-130	0		30
Benzene	100		105		50-130	5		30
2,3-Dimethylpentane	103		106		50-130	3		30
3-Methylhexane	92		95		50-130	3		30
Tertiary-Amyl Methyl Ether	88		92		50-130	4		30
Isooctane	104		104		50-130	0		30
Heptane	105		104		50-130	1		30
Methylcyclohexane	102		104		50-130	2		30
2-Methylheptane	100		101		50-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1880638-3 WG1880638-4								
3-Methylheptane	100		100		50-130	0		30
Toluene	105		105		50-130	0		30
Octane	100		100		50-130	0		30
Ethylbenzene	100		99		50-130	1		30
p/m-Xylene	104		104		50-130	0		30
Nonane (C9)	97		95		50-130	2		30
o-Xylene	104		104		50-130	0		30
Isopropylbenzene	103		102		50-130	1		30
n-Propylbenzene	102		102		50-130	0		30
1-Methyl-3-Ethylbenzene	102		101		50-130	1		30
1-Methyl-4-Ethylbenzene	108		108		50-130	0		30
1,3,5-Trimethylbenzene	104		104		50-130	0		30
1-Decene	84		86		50-130	2		30
1-Methyl-2-Ethylbenzene	106		106		50-130	0		30
Decane (C10)	102		104		50-130	2		30
1,2,4-Trimethylbenzene	100		99		50-130	1		30
sec-Butylbenzene	108		108		50-130	0		30
1-Methyl-4-N-Propylbenzene	101		102		50-130	1		30
n-Butylbenzene	101		102		50-130	1		30
1,2-Diethylbenzene	100		102		50-130	2		30
Undecane	107		107		50-130	0		30
N-Pentylbenzene	99		100		50-130	1		30
Dodecane (C12)	122		122		50-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: Not Specified

Lab Number: L2402156

Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1880638-3 WG1880638-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	99		98		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	100		100		70-130

SEMIVOLATILES

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/02/24 06:13
Analyst: MJS
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	74.4		mg/kg	1.42	0.282	1
C1-Decalins	140		mg/kg	1.42	0.282	1
C2-Decalins	107		mg/kg	1.42	0.282	1
C3-Decalins	50.3		mg/kg	1.42	0.282	1
C4-Decalins	34.9		mg/kg	1.42	0.282	1
Naphthalene	254		mg/kg	2.83	0.814	1
C1-Naphthalenes	312		mg/kg	2.83	0.814	1
C2-Naphthalenes	280		mg/kg	2.83	0.814	1
C3-Naphthalenes	176		mg/kg	2.83	0.814	1
C4-Naphthalenes	83.0		mg/kg	2.83	0.814	1
2-Methylnaphthalene	300		mg/kg	2.83	0.730	1
1-Methylnaphthalene	172		mg/kg	2.83	0.892	1
Benzothiophene	2.65	J	mg/kg	2.83	0.887	1
C1-Benzo(b)thiophenes	33.6		mg/kg	2.83	0.887	1
C2-Benzo(b)thiophenes	953		mg/kg	2.83	0.887	1
C3-Benzo(b)thiophenes	206		mg/kg	2.83	0.887	1
C4-Benzo(b)thiophenes	23.9		mg/kg	2.83	0.887	1
Biphenyl	39.9	G	mg/kg	2.83	0.875	1
2,6-Dimethylnaphthalene	152		mg/kg	2.83	0.673	1
Dibenzofuran	13.9		mg/kg	2.83	0.892	1
Acenaphthylene	2.35	J	mg/kg	2.83	0.540	1
Acenaphthene	13.4		mg/kg	2.83	0.499	1
2,3,5-Trimethylnaphthalene	26.1		mg/kg	2.83	0.463	1
Fluorene	22.9		mg/kg	2.83	0.756	1
C1-Fluorenes	198		mg/kg	2.83	0.756	1
C2-Fluorenes	40.8		mg/kg	2.83	0.756	1
C3-Fluorenes	32.4		mg/kg	2.83	0.756	1
Dibenzothiophene	11.0		mg/kg	2.83	0.781	1

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	11.8		mg/kg	2.83	0.781	1
2/3-Methyldibenzothiophene(2MDT)	11.6		mg/kg	2.83	0.781	1
1-Methyldibenzothiophene(1MDT)	2.60	J	mg/kg	2.83	0.781	1
C1-Dibenzothiophenes BS	27.4		mg/kg	2.83	0.781	1
C2-Dibenzothiophenes	30.4		mg/kg	2.83	0.781	1
C3-Dibenzothiophenes	19.3		mg/kg	2.83	0.781	1
C4-Dibenzothiophenes	7.20		mg/kg	2.83	0.781	1
Phenanthrene	44.4		mg/kg	2.83	0.939	1
3-Methylphenanthrene (3MP)	12.5		mg/kg	2.83	0.939	1
2-Methylphenanthrene (2MP)	16.4		mg/kg	2.83	0.939	1
2-Methylanthracene (2MA)	2.49	J	mg/kg	2.83	0.939	1
9/4-Methylphenanthrene (9MP)	26.3		mg/kg	2.83	0.939	1
1-Methylphenanthrene (1MP)	7.13		mg/kg	2.83	0.939	1
C1-Phenanthrenes/Anthracenes	64.2		mg/kg	2.83	0.939	1
C2-Phenanthrenes/Anthr BS	44.5		mg/kg	2.83	0.939	1
C3-Phenanthrenes/Anthracenes	18.8		mg/kg	2.83	0.939	1
C4-Phenanthrenes/Anthracenes	7.75		mg/kg	2.83	0.939	1
Retene	1.93	J	mg/kg	2.83	0.695	1
Anthracene	9.23		mg/kg	2.83	0.584	1
Carbazole	2.19	J	mg/kg	2.83	0.927	1
1-Methylphenanthrene	9.86		mg/kg	2.83	0.748	1
Fluoranthene	24.7		mg/kg	2.83	0.900	1
Benzo(b)fluorene	2.72	J	mg/kg	2.83	0.820	1
7H-Benzo(c)fluorene	1.44	J	mg/kg	2.83	0.820	1
2-Methylpyrene[1]	1.95	J	mg/kg	2.83	0.745	1
4-Methylpyrene[1]	1.82	J	mg/kg	2.83	0.745	1
1-Methylpyrene[1]	1.45	J	mg/kg	2.83	0.745	1
Pyrene	23.1		mg/kg	2.83	0.745	1
C1-Fluoranthenes/Pyrenes	14.5		mg/kg	2.83	0.745	1
C2-Fluoranthenes/Pyrenes	8.10		mg/kg	2.83	0.745	1
C3-Fluoranthenes/Pyrenes	5.38		mg/kg	2.83	0.745	1
C4-Fluoranthenes/Pyrenes	4.22		mg/kg	2.83	0.745	1
Naphthobenzothiophenes	2.00	J	mg/kg	2.83	0.793	1
C1-Naphthobenzothiophenes	3.91		mg/kg	2.83	0.793	1
C2-Naphthobenzothiophenes	4.55		mg/kg	2.83	0.793	1
C3-Naphthobenzothiophenes	3.84		mg/kg	2.83	0.793	1
C4-Naphthobenzothiophenes	2.67	J	mg/kg	2.83	0.793	1

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Benz(a)anthracene	10.9		mg/kg	2.83	0.578	1
Chrysene/Triphenylene	12.0		mg/kg	2.83	0.573	1
C1-Chrysenes	6.80		mg/kg	2.83	0.573	1
C2-Chrysenes BS	5.66		mg/kg	2.83	0.573	1
C3-Chrysenes	7.33		mg/kg	2.83	0.573	1
C4-Chrysenes	ND		mg/kg	2.83	0.573	1
Benzo(b)fluoranthene	8.73		mg/kg	2.83	0.737	1
Benzo(j)+(k)fluoranthene	8.04		mg/kg	2.83	0.562	1
Benzo(a)fluoranthene	1.72	J	mg/kg	2.83	0.562	1
Benzo(e)pyrene	6.49		mg/kg	2.83	0.584	1
Benzo(a)pyrene	9.23		mg/kg	2.83	0.809	1
Perylene	2.08	J	mg/kg	2.83	0.547	1
Indeno(1,2,3-cd)pyrene	5.73		mg/kg	2.83	0.769	1
Dibenz(a,h)+(a,c)anthracene	2.18	J	mg/kg	2.83	0.765	1
Benzo(g,h,i)perylene	5.30		mg/kg	2.83	0.752	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	87		50-130
Phenanthrene-d10	74		50-130
Benzo(a)pyrene-d12	130		50-130

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified

Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/07/24 18:01
Analyst: CNC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab						
Tetraethyl Lead	ND		mg/kg	0.960	0.295	1
Tetramethyl Lead	ND		mg/kg	0.960	0.295	1
Trimethyl Ethyl Lead	ND		mg/kg	0.960	0.295	1
Diethyl Dimethyl Lead	ND		mg/kg	0.960	0.295	1
Methyl Triethyl Lead	ND		mg/kg	0.960	0.295	1

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/02/24 02:00
Analyst: MJS

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1880136-1					
cis/trans-Decalin	ND		mg/kg	1.50	0.298
C1-Decalins	ND		mg/kg	1.50	0.298
C2-Decalins	ND		mg/kg	1.50	0.298
C3-Decalins	ND		mg/kg	1.50	0.298
C4-Decalins	ND		mg/kg	1.50	0.298
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	ND		mg/kg	3.00	0.862
C3-Naphthalenes	ND		mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Benzothiophene	ND		mg/kg	3.00	0.940
C1-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C2-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C3-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C4-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
4-Methyldibenzothiophene(4MDT)	ND		mg/kg	3.00	0.827

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/02/24 02:00
Analyst: MJS

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1880136-1					
2/3-Methyldibenzothiophene(2MDT)	ND		mg/kg	3.00	0.827
1-Methyldibenzothiophene(1MDT)	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
3-Methylphenanthrene (3MP)	ND		mg/kg	3.00	0.994
2-Methylphenanthrene (2MP)	ND		mg/kg	3.00	0.994
2-Methylanthracene (2MA)	ND		mg/kg	3.00	0.994
9/4-Methylphenanthrene (9MP)	ND		mg/kg	3.00	0.994
1-Methylphenanthrene (1MP)	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618
Carbazole	ND		mg/kg	3.00	0.981
1-Methylphenanthrene	ND		mg/kg	3.00	0.792
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
7H-Benzo(c)fluorene	ND		mg/kg	3.00	0.869
2-Methylpyrene[1]	ND		mg/kg	3.00	0.789
4-Methylpyrene[1]	ND		mg/kg	3.00	0.789
1-Methylpyrene[1]	ND		mg/kg	3.00	0.789
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/02/24 02:00
Analyst: MJS

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1880136-1					
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C1-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C2-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C3-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C4-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	ND		mg/kg	3.00	0.619
Benzo(a)pyrene	ND		mg/kg	3.00	0.856
Perylene	ND		mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	ND		mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	3.00	0.810
Benzo(g,h,i)perylene	ND		mg/kg	3.00	0.797

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	91		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	122		50-130

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 02/07/24 12:32
Analyst: CNC

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:36

Parameter	Result	Qualifier	Units	RL	MDL
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab for sample(s): 01 Batch: WG1880139-1					
Tetraethyl Lead	ND		mg/kg	1.00	0.307
Tetramethyl Lead	ND		mg/kg	1.00	0.307
Trimethyl Ethyl Lead	ND		mg/kg	1.00	0.307
Diethyl Dimethyl Lead	ND		mg/kg	1.00	0.307
Methyl Triethyl Lead	ND		mg/kg	1.00	0.307

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: Not Specified

Lab Number: L2402156

Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01 Batch: WG1880136-2 WG1880136-3								
Naphthalene	99		101		50-130	2		30
2-Methylnaphthalene	92		94		50-130	2		30
Acenaphthylene	101		104		50-130	3		30
Acenaphthene	96		98		50-130	2		30
Fluorene	102		103		50-130	1		30
Phenanthrene	96		98		50-130	2		30
Anthracene	108		109		50-130	1		30
Fluoranthene	69		71		50-130	3		30
Pyrene	76		78		50-130	3		30
Benz(a)anthracene	111		114		50-130	3		30
Chrysene	105		108		50-130	3		30
Chrysene/Triphenylene	105		108		50-130	3		30
Benzo(b)fluoranthene	114		113		50-130	1		30
Benzo(j)+(k)fluoranthene	112		119		50-130	6		30
Benzo(a)pyrene	123		126		50-130	2		30
Indeno(1,2,3-cd)pyrene	125		127		50-130	2		30
Dibenz(a,h)+(a,c)anthracene	122		124		50-130	2		30
Benzo(g,h,i)perylene	114		118		50-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: Not Specified

Lab Number: L2402156

Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01 Batch: WG1880136-2 WG1880136-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	99		101		50-130
Phenanthrene-d10	102		103		50-130
Benzo(a)pyrene-d12	123		124		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: Not Specified

Lab Number: L2402156

Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab Associated sample(s): 01 Batch: WG1880139-2 WG1880139-3								
Tetraethyl Lead	83		86		50-130	4		30

PETROLEUM HYDROCARBONS

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8015D(M)
Analytical Date: 02/02/24 01:13
Analyst: AMV
Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	457		mg/kg	189	56.0	1
n-Decane (C10)	236		mg/kg	189	60.2	1
n-Undecane (C11)	244		mg/kg	189	56.4	1
n-Dodecane (C12)	224		mg/kg	189	41.2	1
n-Tridecane (C13)	269		mg/kg	189	51.8	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	189	28.4	1
n-Tetradecane (C14)	739		mg/kg	189	28.4	1
2,6,10-Trimethyltridecane (1470)	164	J	mg/kg	189	22.5	1
n-Pentadecane (C15)	138	J	mg/kg	189	22.5	1
n-Hexadecane (C16)	88.6	J	mg/kg	189	28.4	1
Norpristane (1650)	129	J	mg/kg	189	62.3	1
n-Heptadecane (C17)	ND		mg/kg	189	62.3	1
Pristane	398		mg/kg	189	40.3	1
n-Octadecane (C18)	6820	G	mg/kg	189	37.9	1
Phytane	243		mg/kg	189	23.7	1
n-Nonadecane (C19)	ND		mg/kg	189	48.5	1
n-Eicosane (C20)	55.1	J	mg/kg	189	26.7	1
n-Heneicosane (C21)	ND		mg/kg	189	22.6	1
n-Docosane (C22)	ND		mg/kg	189	19.7	1
n-Tricosane (C23)	ND		mg/kg	189	24.0	1
n-Tetracosane (C24)	ND		mg/kg	189	31.6	1
n-Pentacosane (C25)	111	J	mg/kg	189	100.	1
n-Hexacosane (C26)	ND		mg/kg	189	27.7	1
n-Heptacosane (C27)	ND		mg/kg	189	22.7	1
n-Octacosane (C28)	ND		mg/kg	189	40.5	1
n-Nonacosane (C29)	ND		mg/kg	189	126.	1
n-Triacontane (C30)	ND		mg/kg	189	21.7	1
n-Hentriacontane (C31)	ND		mg/kg	189	26.8	1

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

SAMPLE RESULTS

Lab ID: L2402156-01
Client ID: PH B-150-LNAPL-2023.12.05
Sample Location: Not Specified
Date Collected: 12/05/23 13:00
Date Received: 01/12/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	189	23.8	1
n-Tritriacontane (C33)	ND		mg/kg	189	26.6	1
n-Tetratriacontane (C34)	ND		mg/kg	189	30.0	1
n-Pentatriacontane (C35)	ND		mg/kg	189	33.0	1
n-Hexatriacontane (C36)	ND		mg/kg	189	37.6	1
n-Heptatriacontane (C37)	ND		mg/kg	189	41.9	1
n-Octatriacontane (C38)	ND		mg/kg	189	44.0	1
n-Nonatriacontane (C39)	ND		mg/kg	189	61.3	1
n-Tetracontane (C40)	ND		mg/kg	189	61.3	1
Total Petroleum Hydrocarbons (C9-C44)	639000		mg/kg	6230	1370	1
Total Saturated Hydrocarbons	10300	J	mg/kg	189	19.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	101		50-130
d50-Tetracosane	93		50-130

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/01/24 17:54
Analyst: AMV

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1880136-1					
n-Nonane (C9)	ND		mg/kg	200	59.3
n-Decane (C10)	ND		mg/kg	200	63.8
n-Undecane (C11)	ND		mg/kg	200	59.7
n-Dodecane (C12)	ND		mg/kg	200	43.6
n-Tridecane (C13)	ND		mg/kg	200	54.9
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	200	30.1
n-Tetradecane (C14)	ND		mg/kg	200	30.1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	200	23.9
n-Pentadecane (C15)	ND		mg/kg	200	23.9
n-Hexadecane (C16)	ND		mg/kg	200	30.1
Norpristane (1650)	ND		mg/kg	200	66.0
n-Heptadecane (C17)	ND		mg/kg	200	66.0
Pristane	ND		mg/kg	200	42.7
n-Octadecane (C18)	51.6	J	mg/kg	200	40.1
Phytane	ND		mg/kg	200	25.1
n-Nonadecane (C19)	ND		mg/kg	200	51.4
n-Eicosane (C20)	ND		mg/kg	200	28.3
n-Heneicosane (C21)	ND		mg/kg	200	23.9
n-Docosane (C22)	ND		mg/kg	200	20.9
n-Tricosane (C23)	ND		mg/kg	200	25.4
n-Tetracosane (C24)	ND		mg/kg	200	33.5
n-Pentacosane (C25)	113	J	mg/kg	200	106.
n-Hexacosane (C26)	ND		mg/kg	200	29.4
n-Heptacosane (C27)	ND		mg/kg	200	24.1
n-Octacosane (C28)	ND		mg/kg	200	42.9
n-Nonacosane (C29)	ND		mg/kg	200	133.
n-Triacontane (C30)	ND		mg/kg	200	22.9
n-Hentriacontane (C31)	ND		mg/kg	200	28.3
n-Dotriacontane (C32)	ND		mg/kg	200	25.2

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/01/24 17:54
Analyst: AMV

Extraction Method: EPA 3580A
Extraction Date: 01/31/24 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1880136-1					
n-Tritriacontane (C33)	ND		mg/kg	200	28.1
n-Tetratriacontane (C34)	ND		mg/kg	200	31.8
n-Pentatriacontane (C35)	ND		mg/kg	200	34.9
n-Hexatriacontane (C36)	ND		mg/kg	200	39.8
n-Heptatriacontane (C37)	ND		mg/kg	200	44.4
n-Octatriacontane (C38)	ND		mg/kg	200	46.6
n-Nonatriacontane (C39)	ND		mg/kg	200	64.9
n-Tetracontane (C40)	ND		mg/kg	200	64.9
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	6600	1450
Total Saturated Hydrocarbons	165	J	mg/kg	200	20.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	103		50-130
d50-Tetracosane	102		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: Not Specified

Lab Number: L2402156

Report Date: 02/08/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1880136-2 WG1880136-3								
Nonane (C9)	98		99		50-130	1		30
n-Decane (C10)	103		104		50-130	1		30
n-Dodecane (C12)	106		106		50-130	0		30
n-Tetradecane (C14)	103		104		50-130	1		30
n-Hexadecane (C16)	109		112		50-130	3		30
n-Octadecane (C18)	117		118		50-130	1		30
n-Nonadecane (C19)	106		107		50-130	1		30
n-Eicosane (C20)	107		108		50-130	1		30
n-Docosane (C22)	105		106		50-130	1		30
n-Tetracosane (C24)	118		113		50-130	4		30
n-Hexacosane (C26)	106		108		50-130	2		30
n-Octacosane (C28)	108		109		50-130	1		30
n-Triacontane (C30)	109		111		50-130	2		30
n-Hexatriacontane (C36)	103		105		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	104		105		50-130
d50-Tetracosane	104		105		50-130

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L2402156
Report Date: 02/08/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2402156-01A	Amber 120ml unpreserved	A	NA		3.8	Y	Absent		A2-ORGLEAD(365),A2-PIANO8260(365),A2-SHC(365),A2-ALKPAH(365)
L2402156-01X	Vial unpreserved 20ml hard-cap split	NA	NA			Y	Absent		A2-PIANO8260(365)
L2402156-01Y	Vial unpreserved 20ml hard-cap split	NA	NA			Y	Absent		A2-PIANO8260(365)

*Values in parentheses indicate holding time in days

Project Name:	Not Specified	**Lab Number:**	L2402156
Project Number:	Not Specified	**Report Date:**	02/08/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	Not Specified	**Lab Number:**	L2402156
Project Number:	Not Specified	**Report Date:**	02/08/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	Not Specified	**Lab Number:**	L2402156
Project Number:	Not Specified	**Report Date:**	02/08/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: Not Specified
Project Number: Not Specified
Lab Number: L2402156
Report Date: 02/08/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 1/13/24

ALPHA Job #: L2402156

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name: Evergreen PH - Benzene Area

Project Location: Hiloc/PES - Phila, 3144 W.Passyunk Avenue, Philadelphia, PA

Project #:

Project Manager: Joe Roberts

ALPHA Quote #: 25508

Client Information

Client: Aquaterra Technologies (Evergreen)

Address: 901 S.Bolmar Street, Suite A

West Chester, PA. 19382

Phone: 419-297-4151

Fax: N/A

Email: jwr@aquaterra-tech.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Please send copy of results (also) to ChemQuants

ANALYSIS

Per ChemQuants Quote 0331

& Alpha Quote 25508

SAMPLE HANDLING

Filtration
☐ Done
☐ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials
02156-01	PH B-150-LNAPL-2023.12.05	12/5/23	13:00	LNAPL	MH

Container Type	-	-	-	-	-	-	-	-	-	-	-	-			
Preservative	-	-	-	-	-	-	-	-	-	-	-	-			

Relinquished By:	Date/Time	Received By:	Date/Time
Mike Henderling	12/5/23 13:00	Joe Roberts	12/5/23 13:00
Joe Roberts	12/12/24 13:17		12/12/24 13:17
	1/12/24 15:20		1/12/24 KD
	1/12/24 2100		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

1/13/24 0440 Adam Flynn 1/13/24 14:05

1/13/24 0300

1/13/24 0300

Monique Irvy 1/13/24 1213

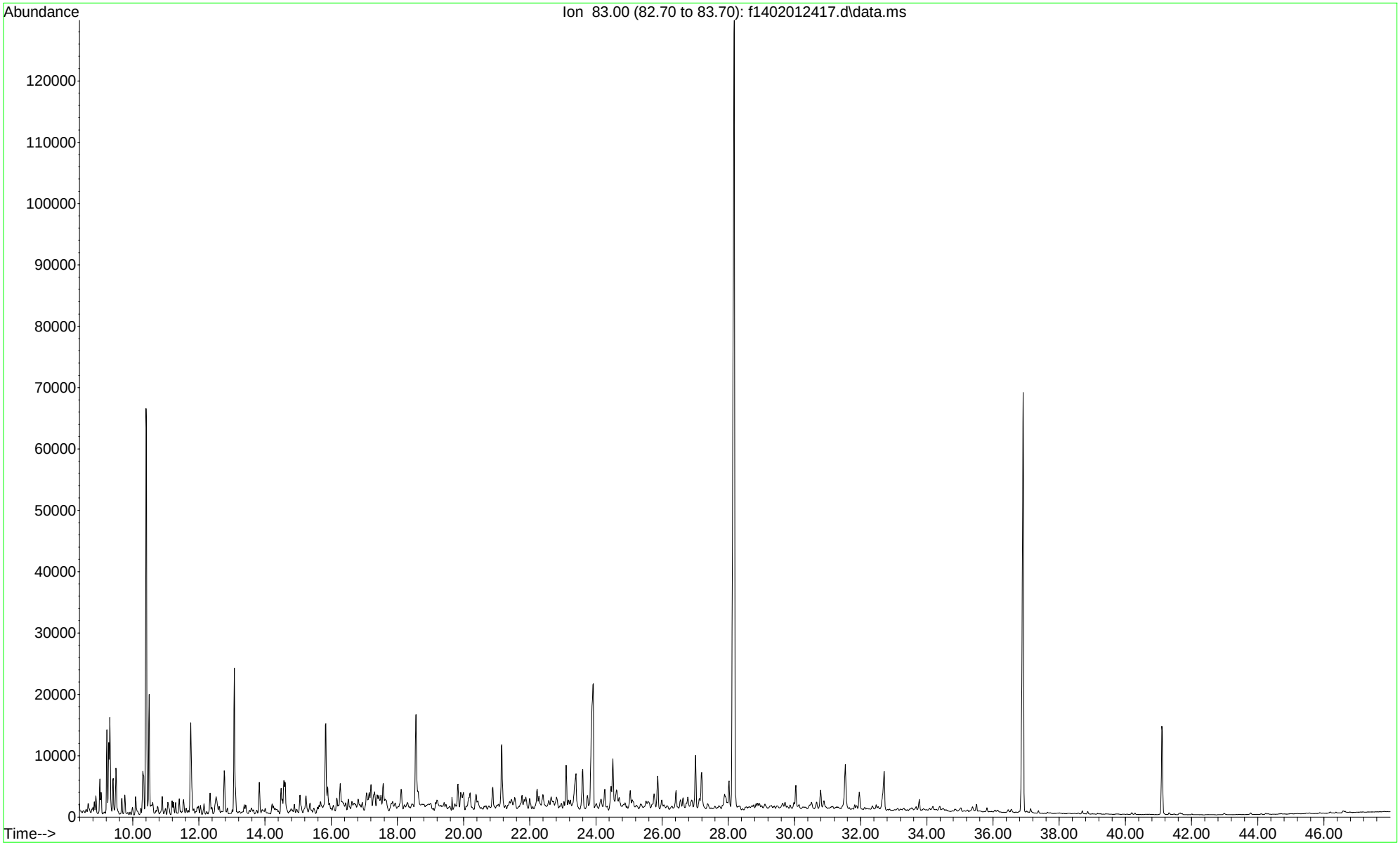
Adam Flynn 1/13/24 12:13

Paul Maggella 1/12/24 0040

1/13/24 Paul Maggella 1/12/24 2130

Ion Chromatograms

File :O:\Forensics\Data\PAH14\2024\FEB24\feb01\f1402012417.d
Operator : PAH14:MJS
Acquired : 2 Feb 2024 6:13 am using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2402156-01,32,,
Misc Info : WG1880910,WG1880136,ICAL20759
Vial Number: 17



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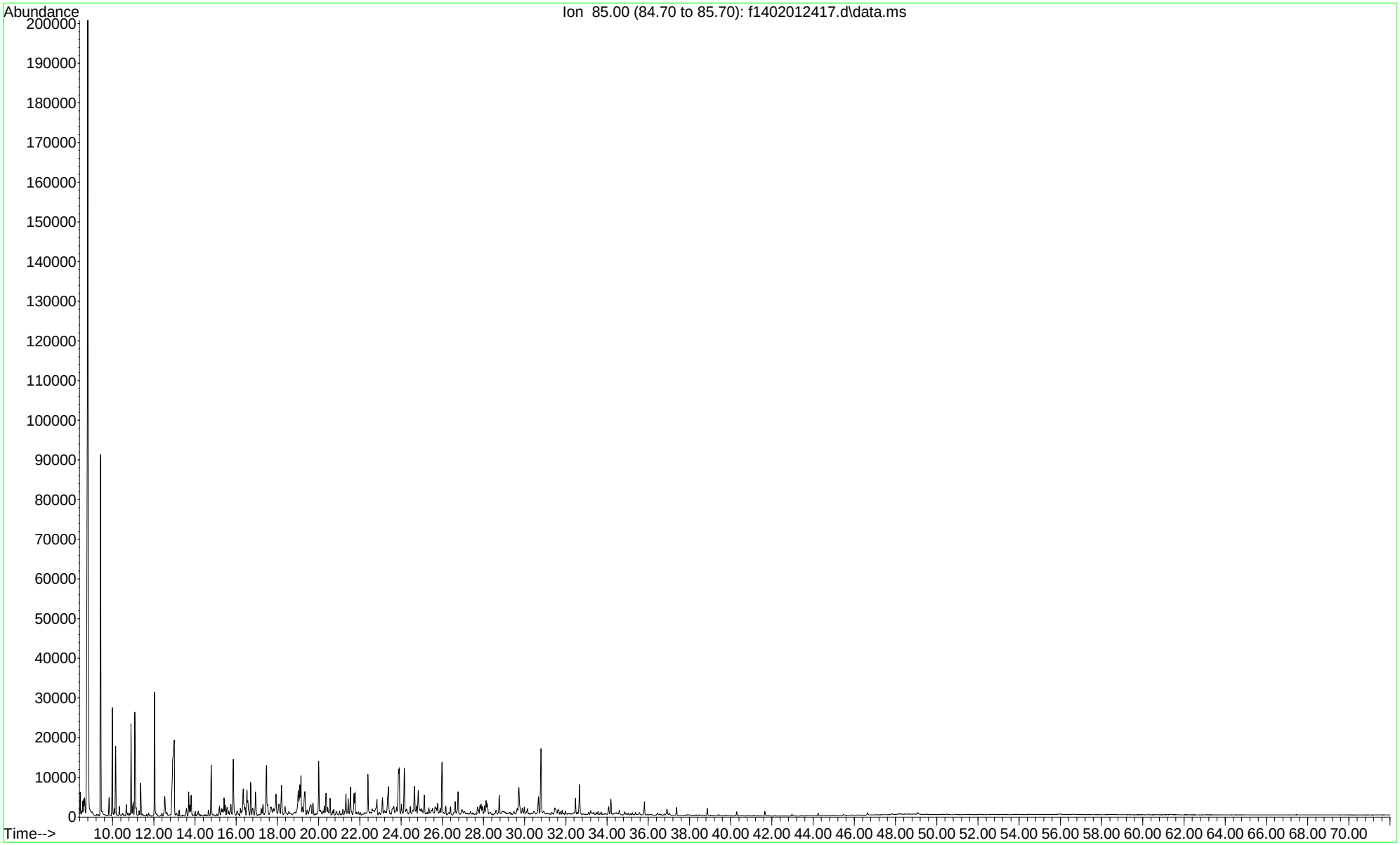
Vial Number: 17



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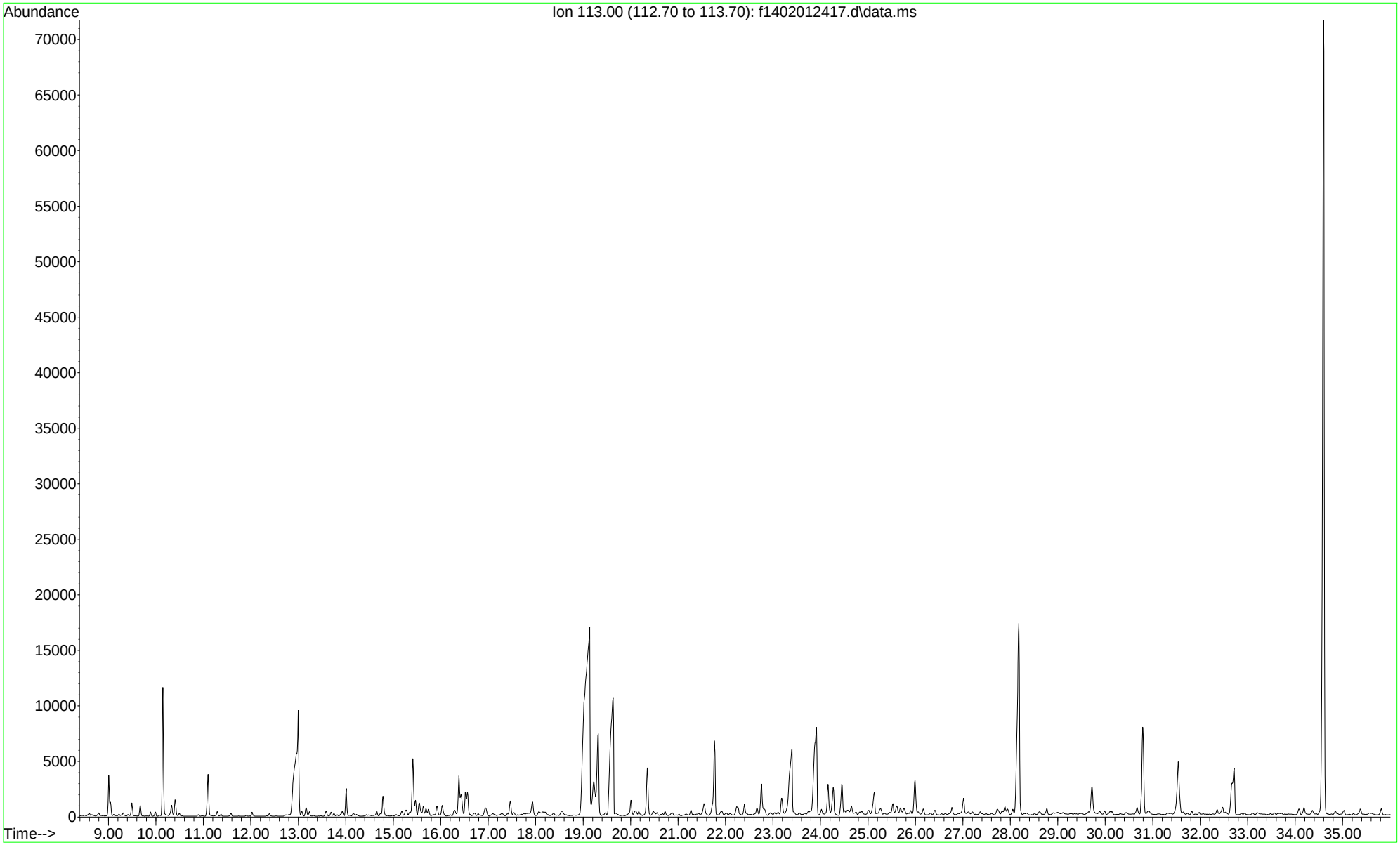

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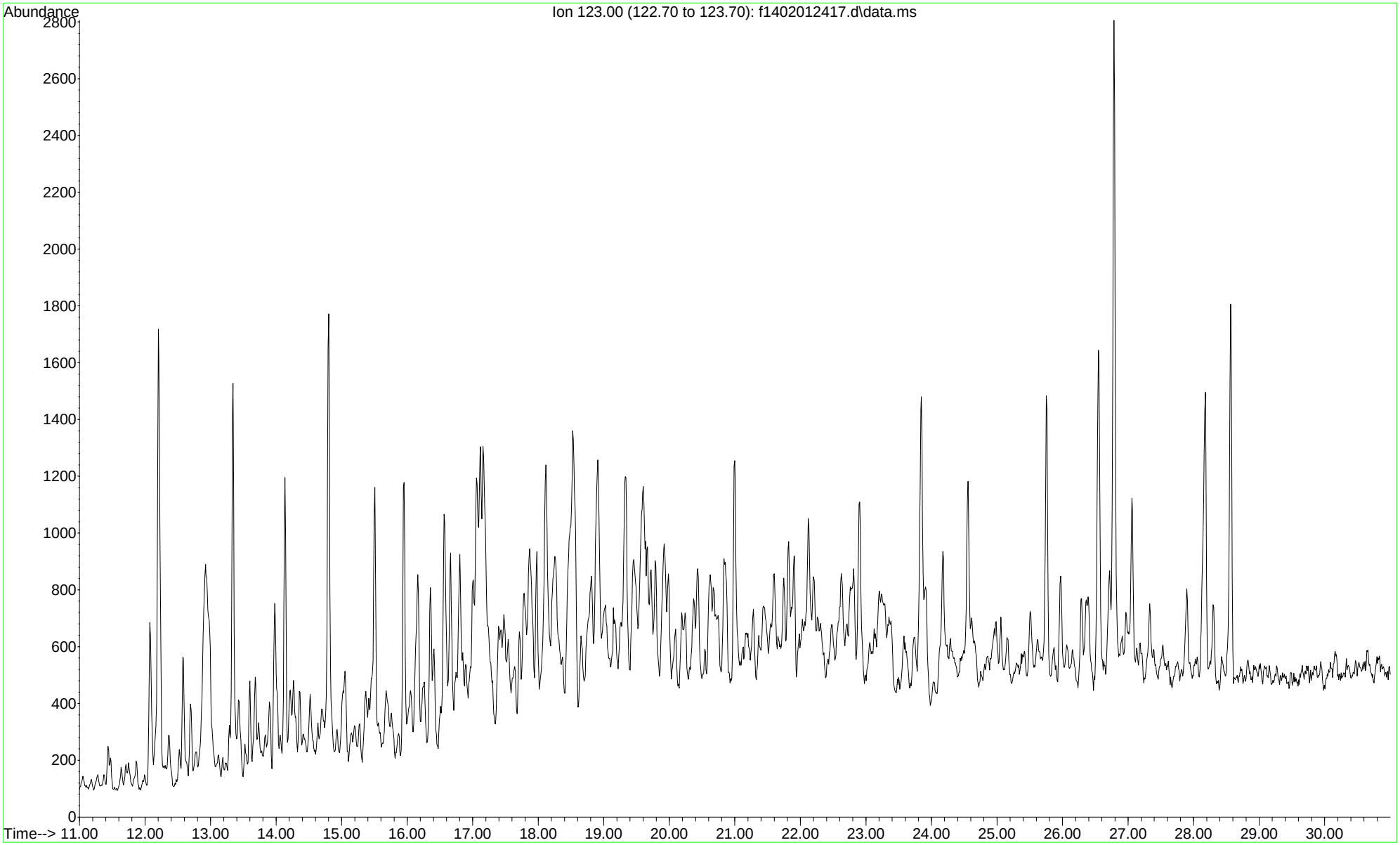
Vial Number: 17



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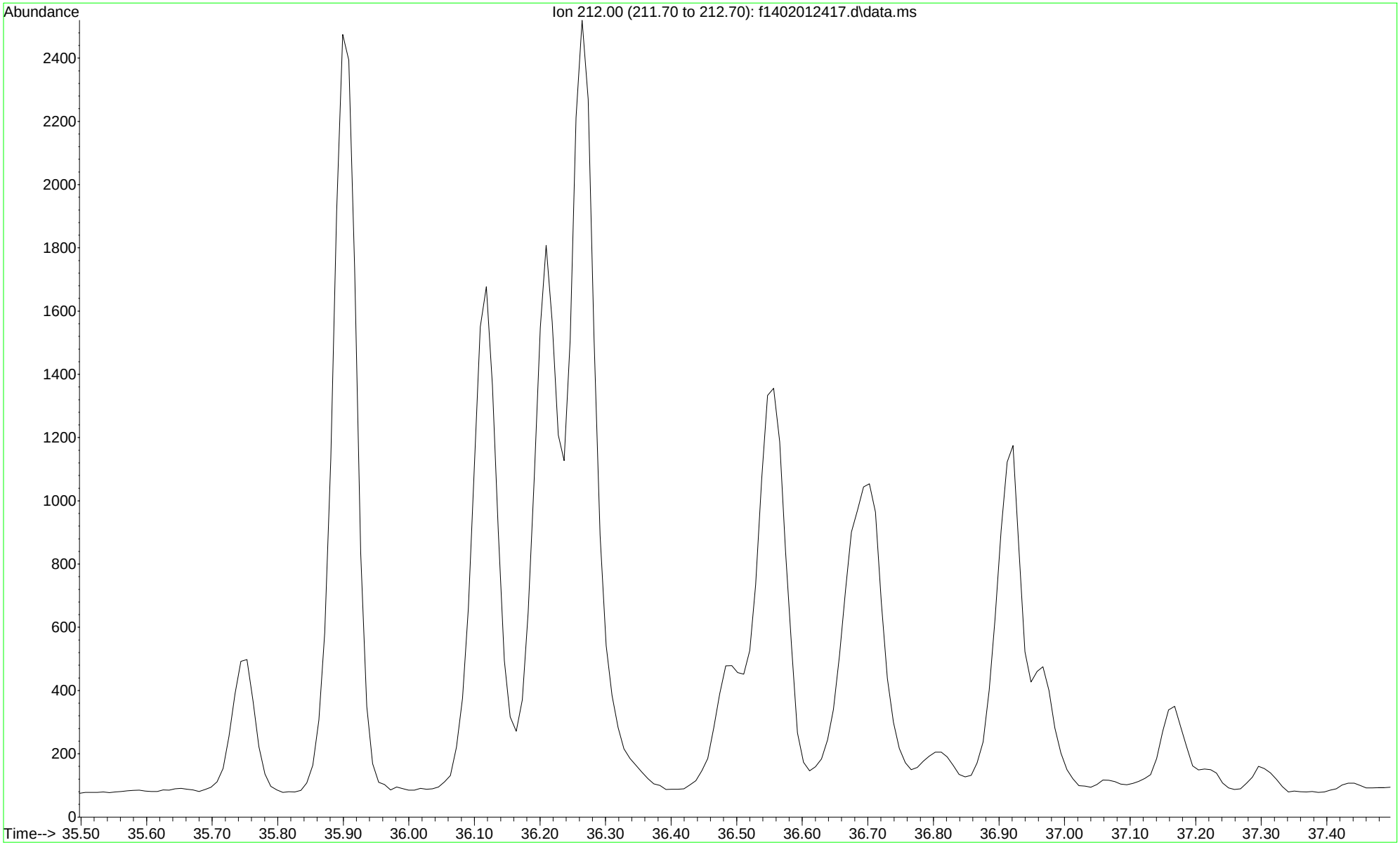

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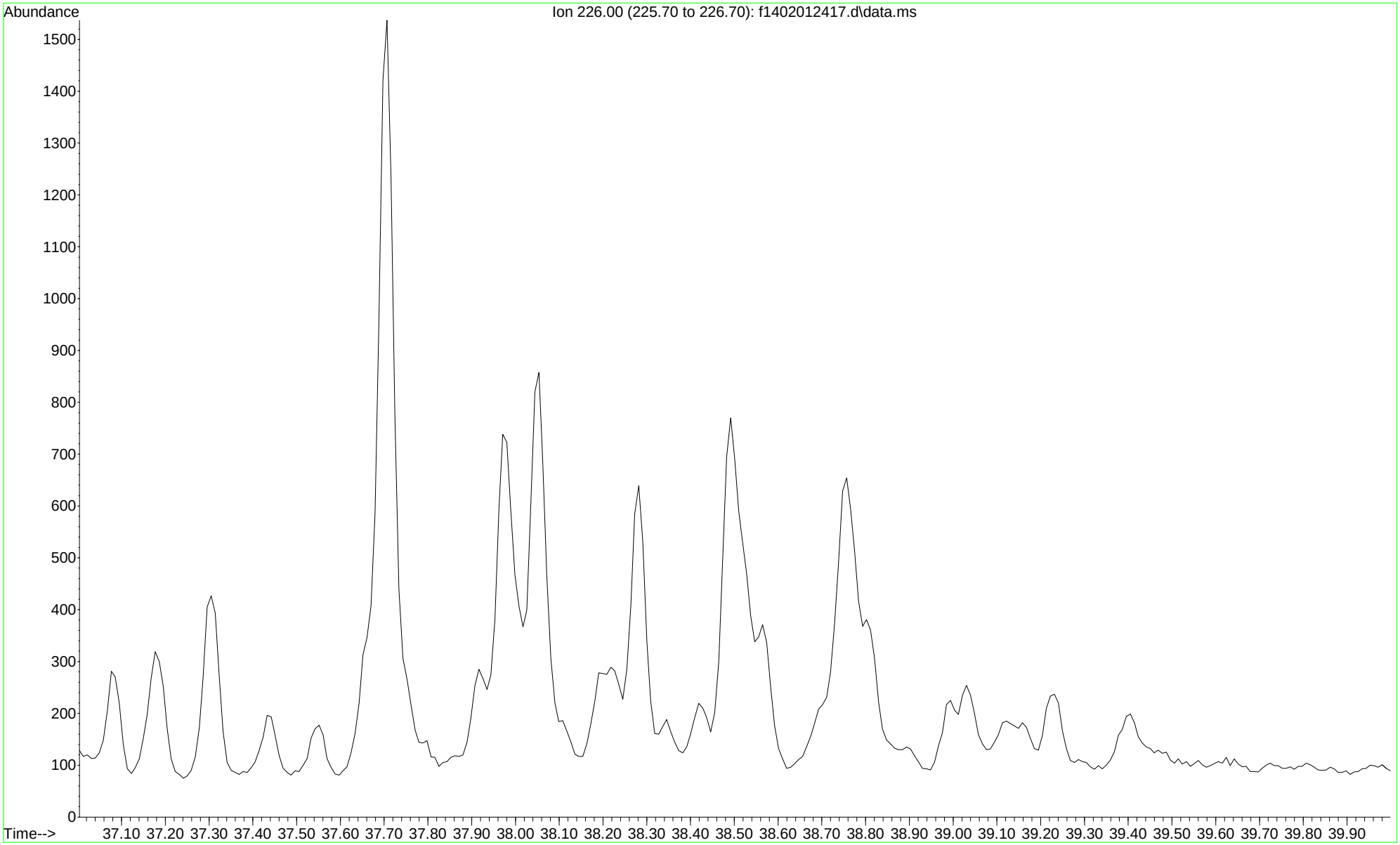

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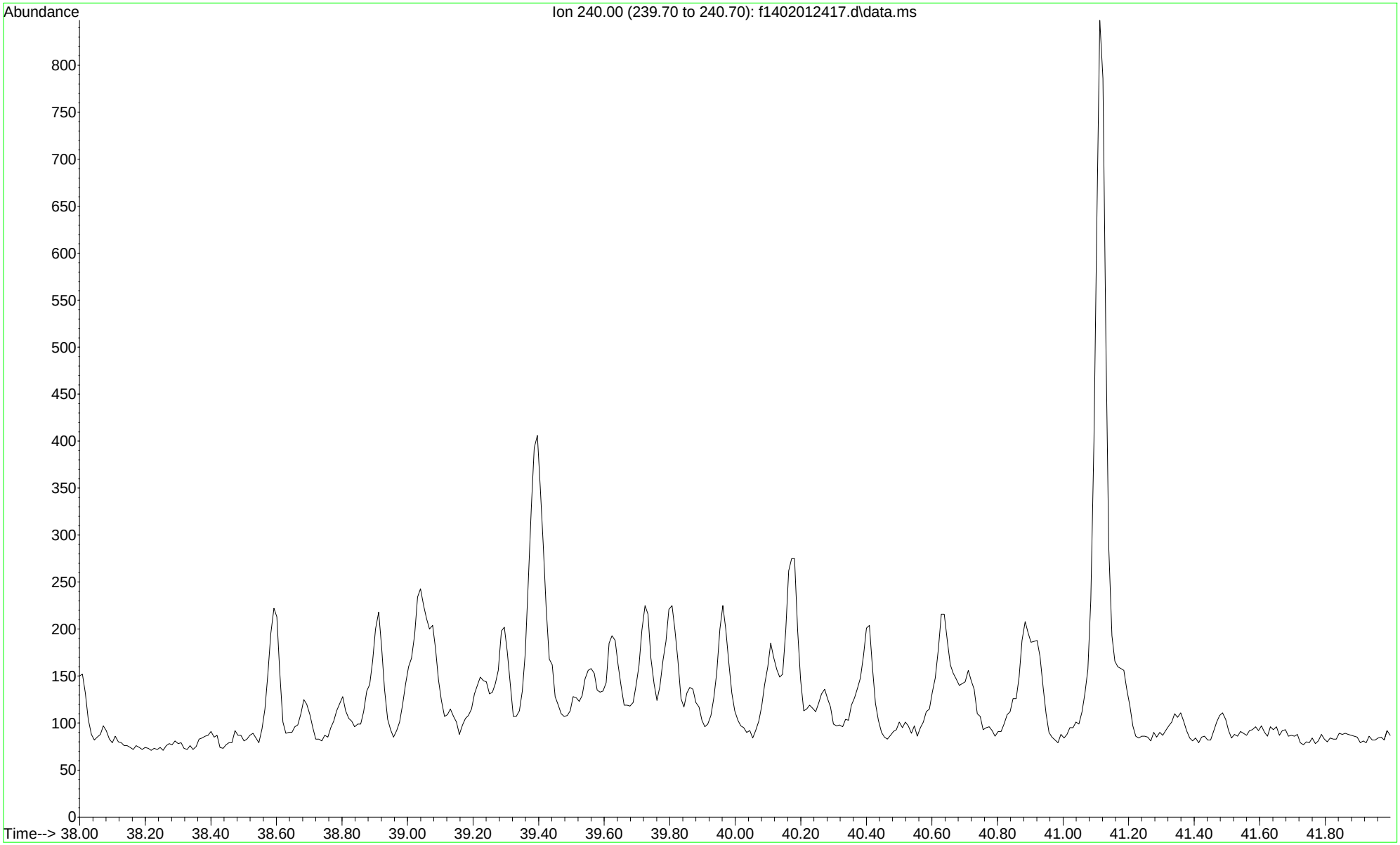

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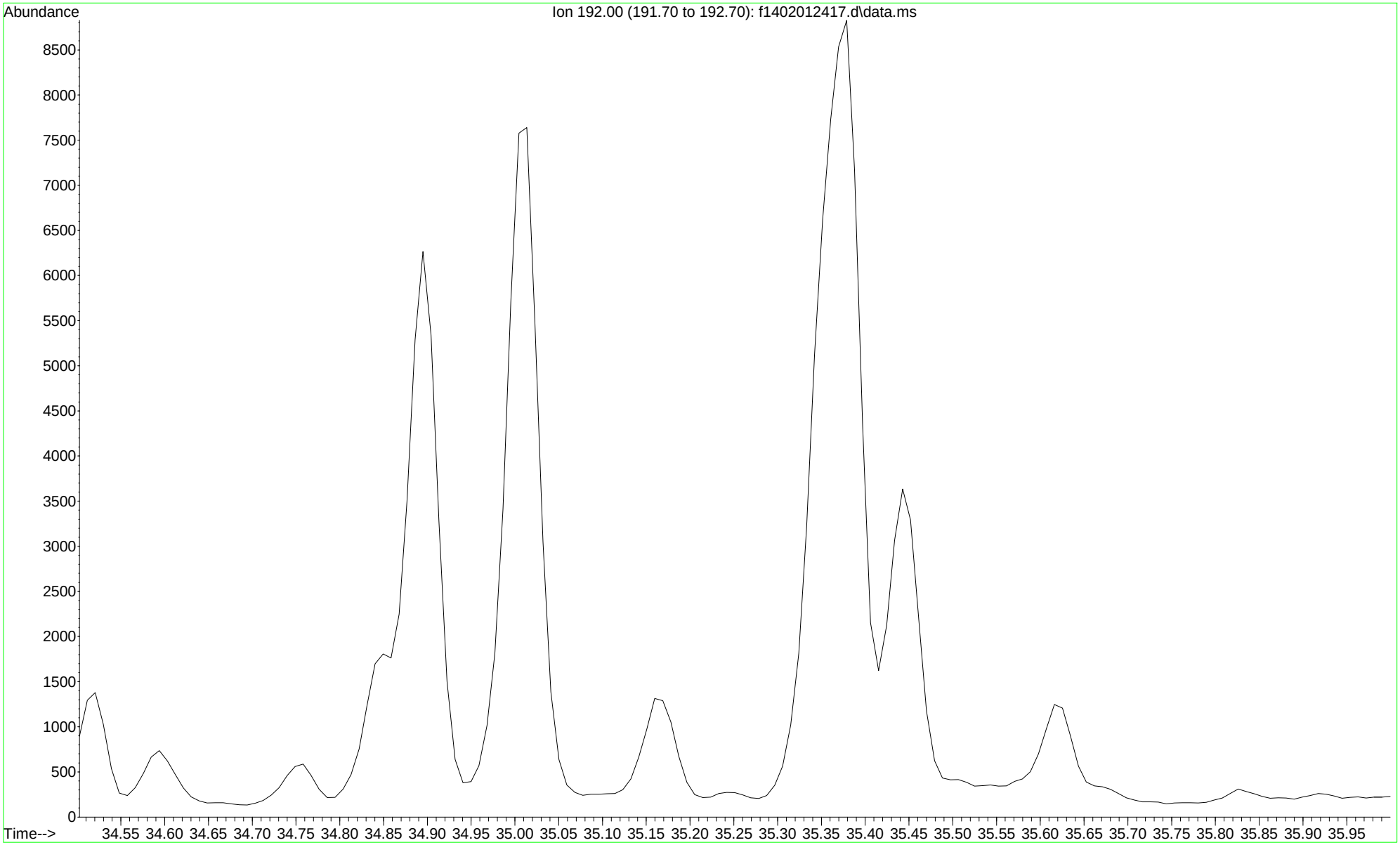

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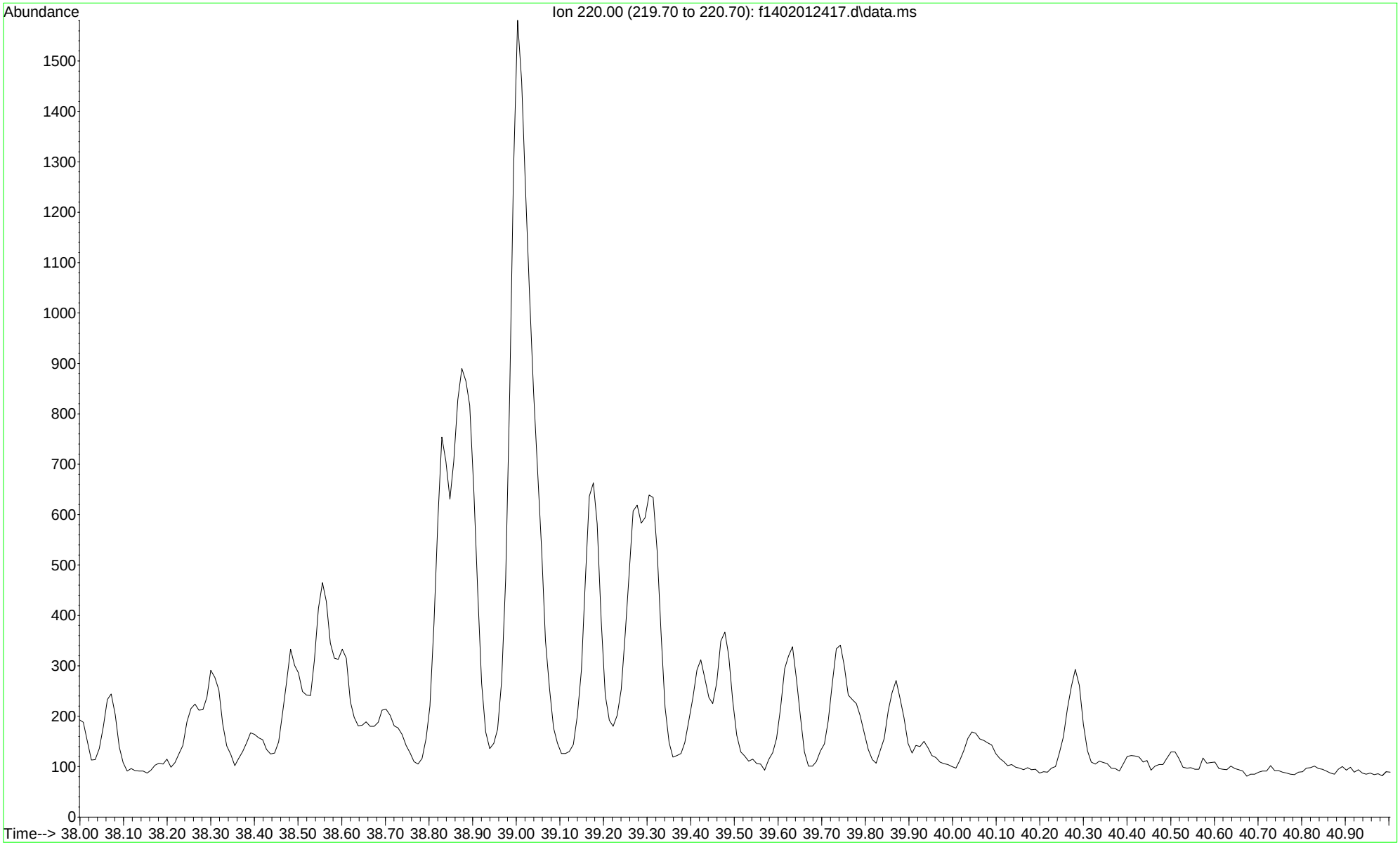

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Instrument : PAH14
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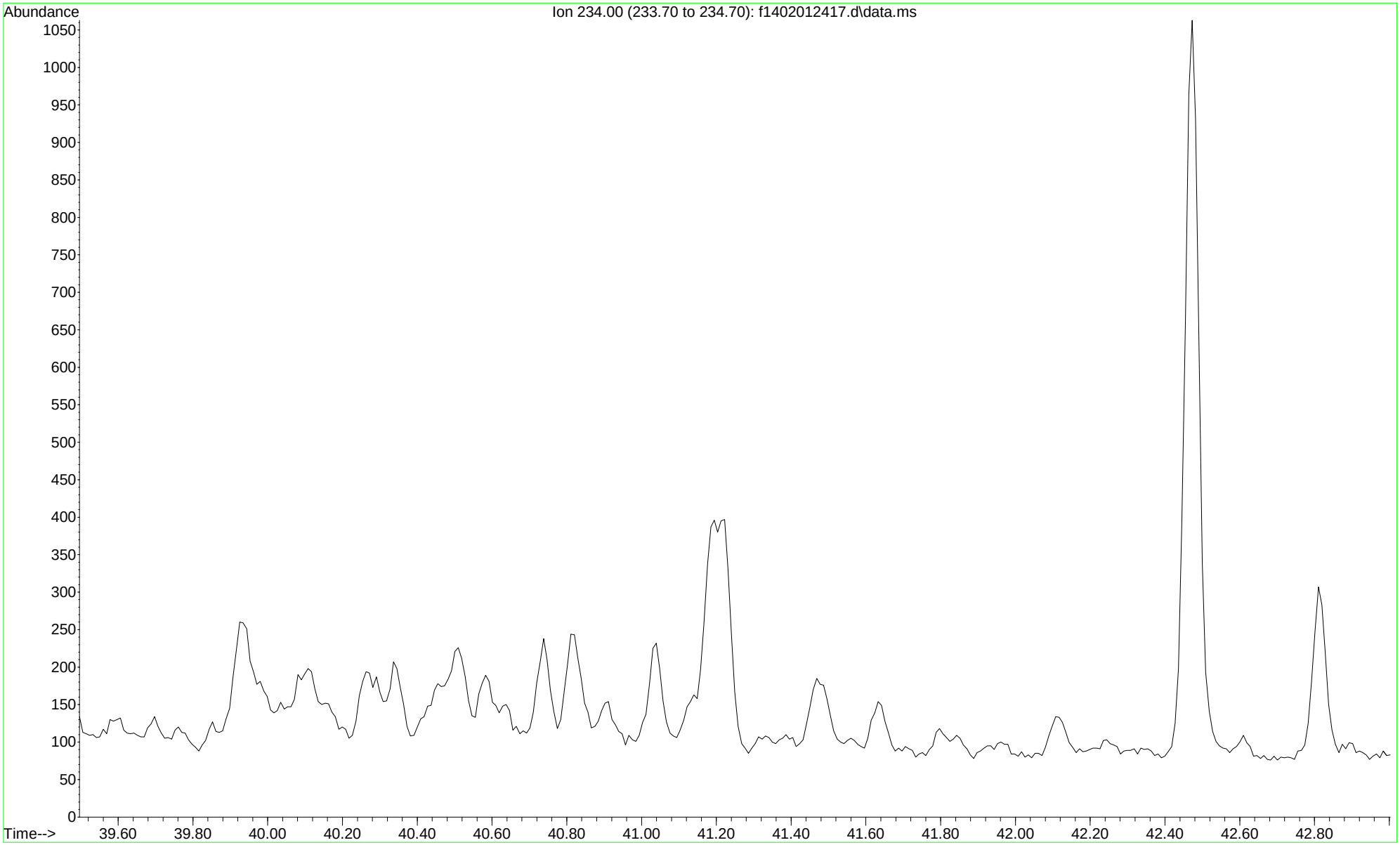

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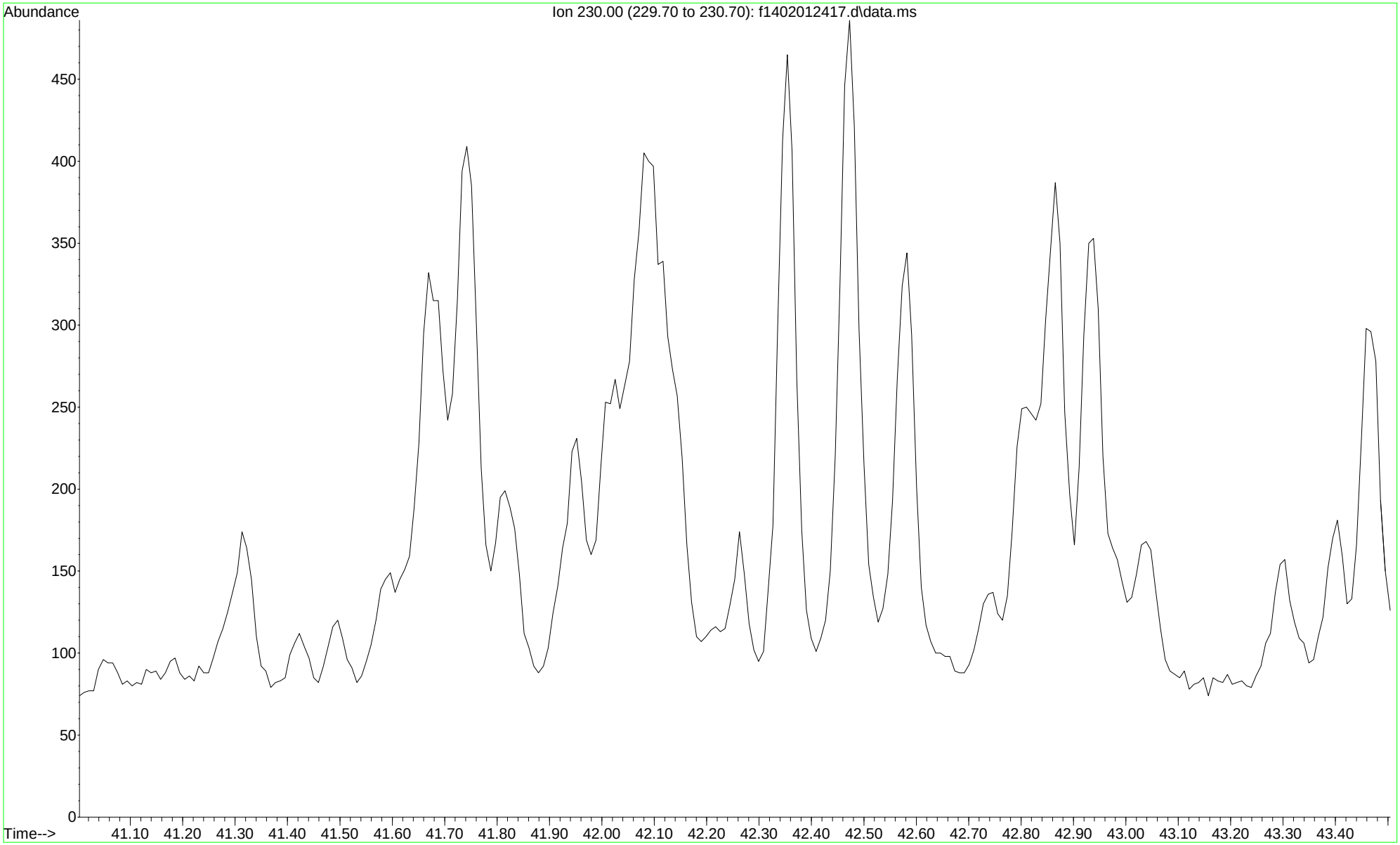

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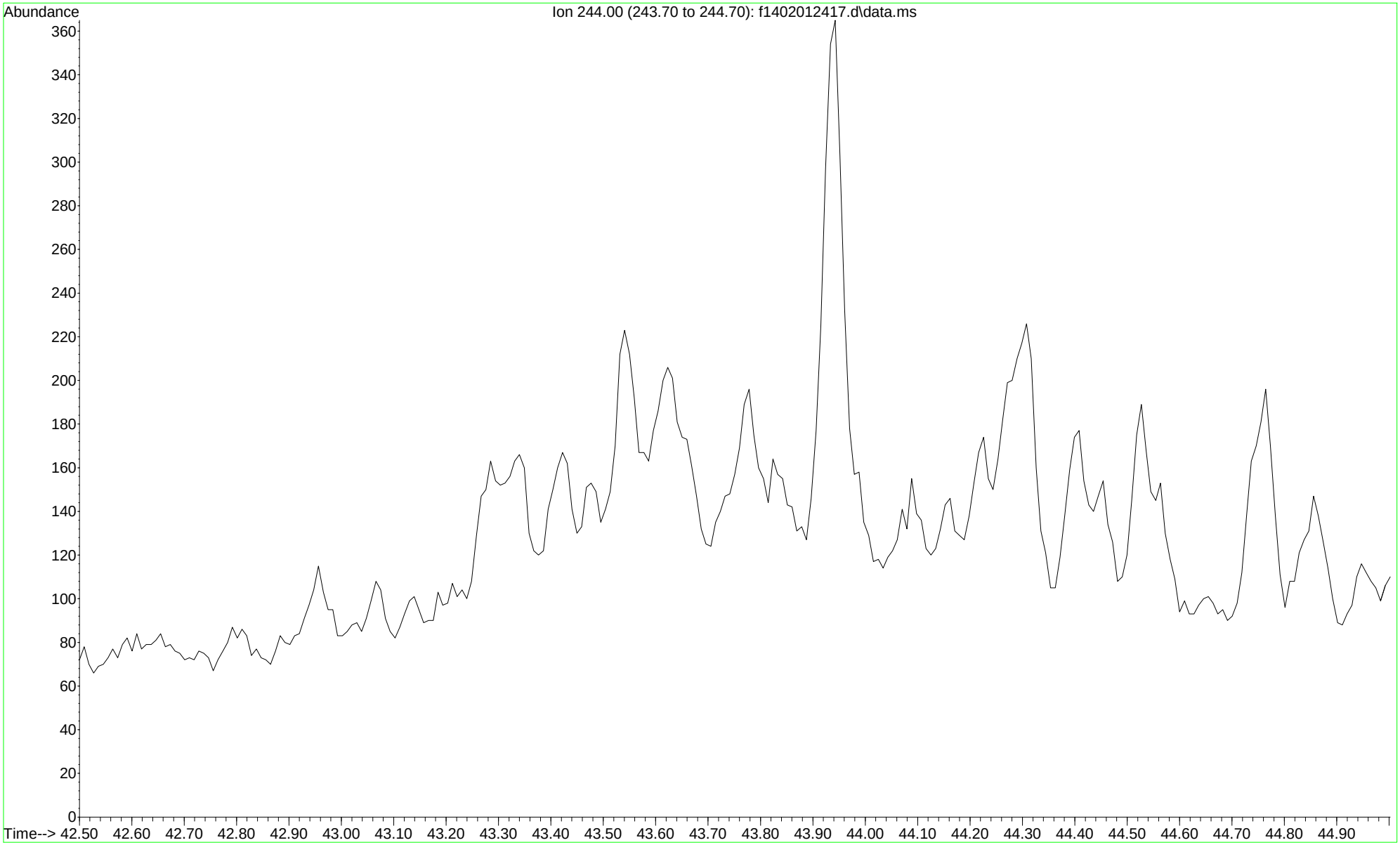

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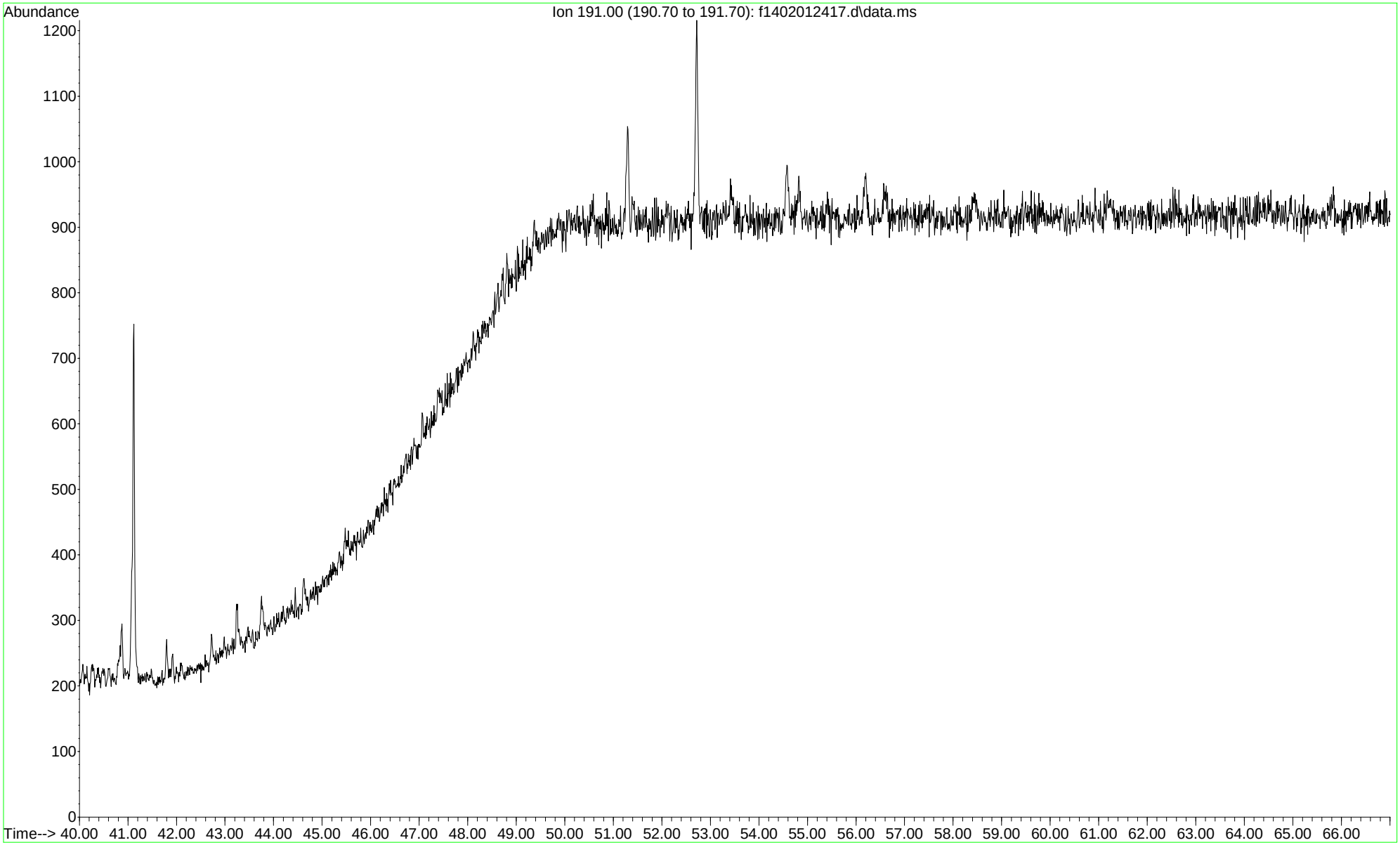

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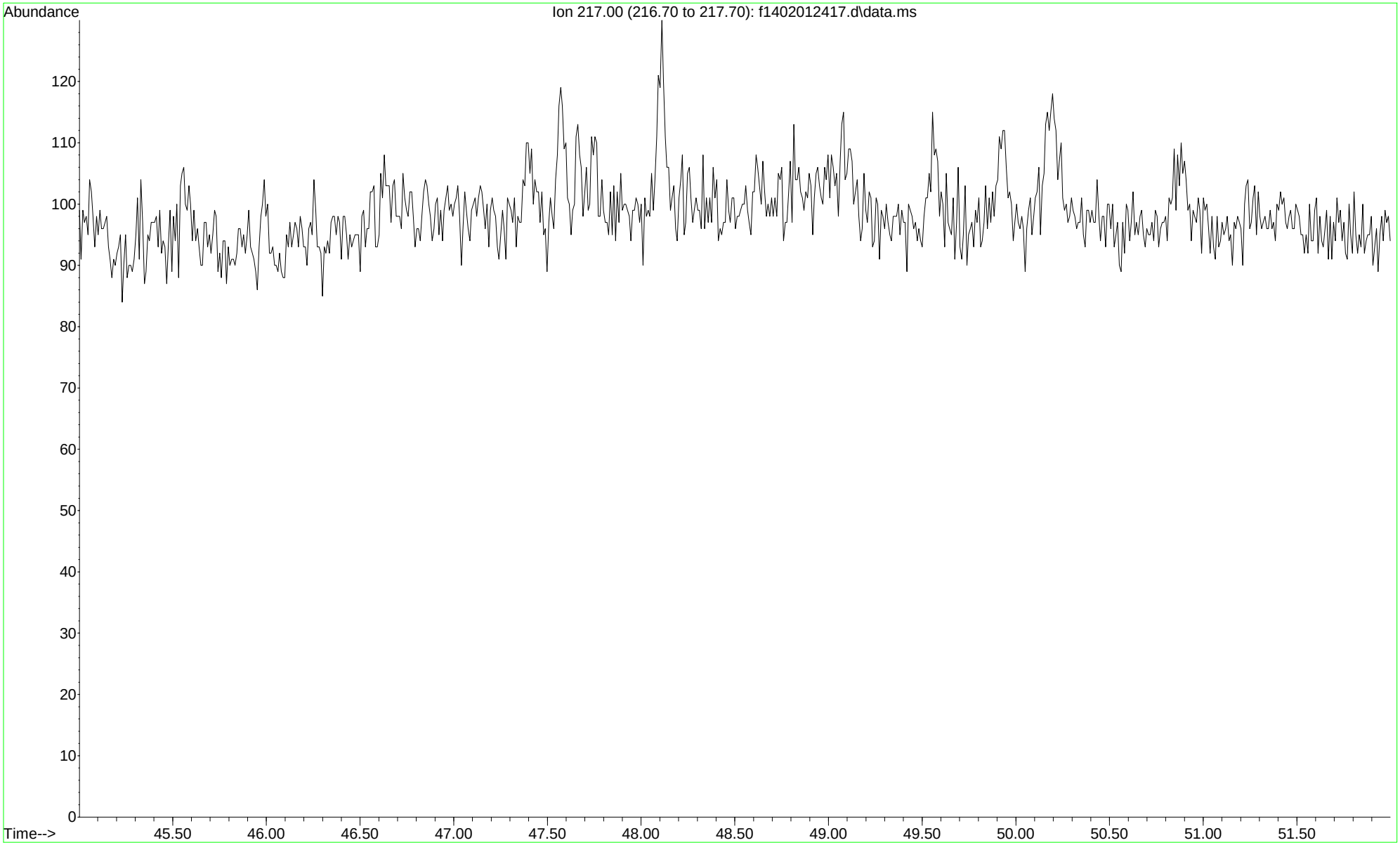

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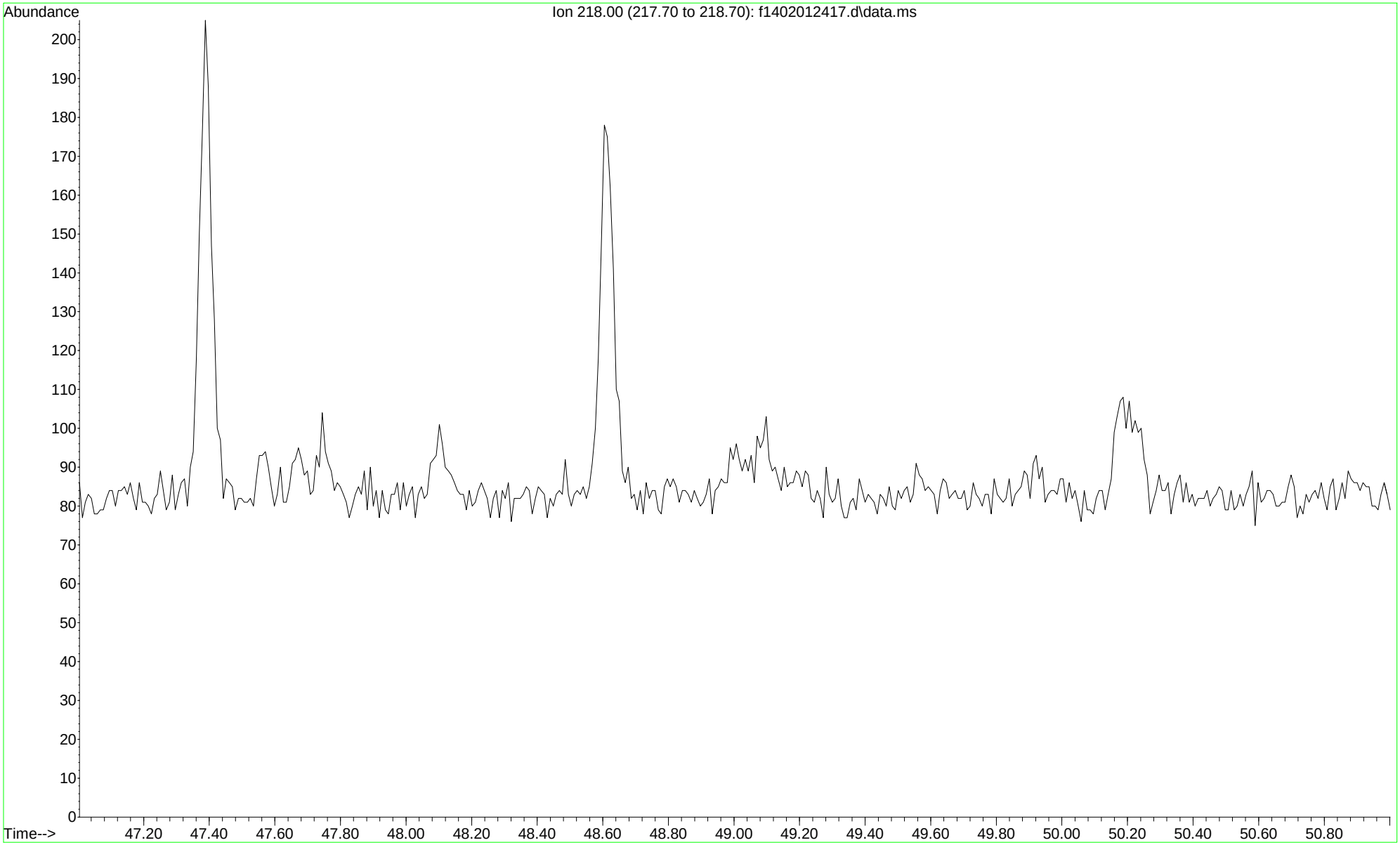

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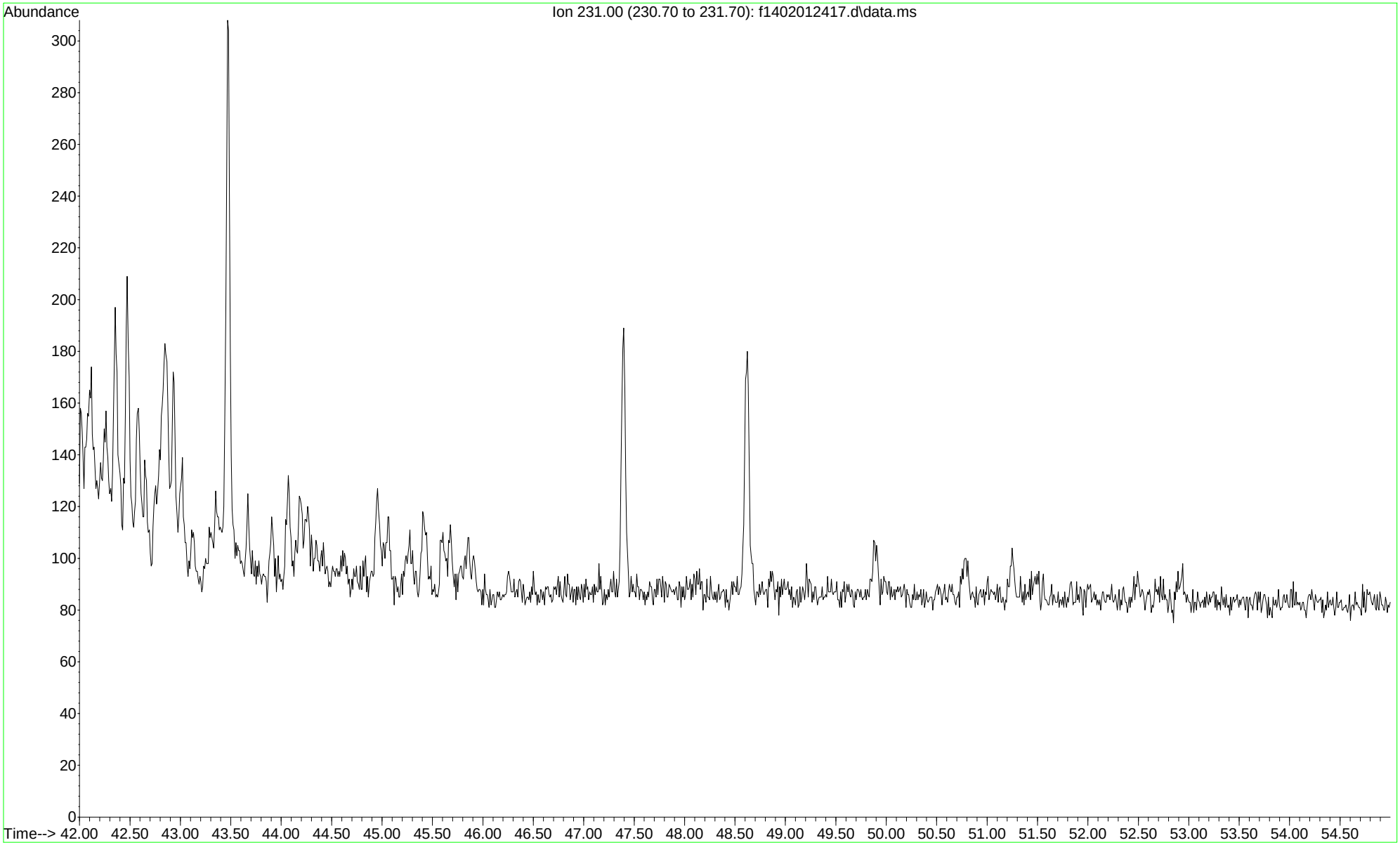

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Aquaterra Technologies, Inc.

ATTN: Joe Roberts

Project#: 0331

Project name: Benzene area B-150

Laboratory#: L2402156

Interpreter

March 12, 2024

Joe Roberts
Aquaterra Technologies
901 S. Bolmar St.
West Chester, PA 19382

CQ Project: #0331
Project Name: Evergreen – Benzene area B-150

Introduction

I am the principal at ChemQuants, LLC, an environmental forensics firm in Santa Barbara, California. I received a bachelor's degree in Chemistry, a second bachelor's degree in Environmental Science, and a Master's in Analytical Chemistry from Florida International University. My professional experience has focused on environmental forensics of oil spills. My specialties include petroleum release investigations on coastal waterways and subsurface environments at petroleum terminals and fueling stations and "big environmental data" chemometrics and data visualization. Besides being chair at a scientific conference, I have authored numerous publications and presentations to my peers.

Aquaterra Technologies hired ChemQuants, LLC. to review and compare the chemistry data reports for the LNAPL samples in the tables below. The scope of this investigation includes petroleum-type classifications and weathering impact assessment for four samples collected from B-150 in AOI-6. Their chemical distributions were presented in the Fingerprint Mosaics (figures 1 and 2). Of the four samples from B-150, B-150 041206 was collected in 2006 and analyzed at Torkelson Geoscience, and B-150 19752 was collected in 2016 and analyzed at PACE Energy Services. The historical samples were only analyzed using the ASTM whole oil methods.

Analytical Chemistry

The three more recently collected samples were analyzed at PACE Alpha (Mansfield, MA). The tables contain sample ID information, Laboratory ID information, ChemQuants project ID, sample matrix, and chemical methods[1].

PACE Alpha Analytical

1) *Saturated Hydrocarbons by GC/FID / EPA 8015D*
2) *Alkylated PAHs w/ Full Scan TICs by GC/MS / EPA 8270D-SIM(M)*
3) *C5-C12 PIANO w/ Oxygenates and additives quantification and fingerprinting by GC/MS / EPA 8260B (Mod.)*
4) *Organic Lead by GC/MS / EPA 8270D-SIM*

Product Samples

Client ID	Lab ID	Lab	CQ Project	Matrix	Whole Oil GC/FID	Organic Lead Isomers	8015D GC/FID	VOC PIANO GC/MS	Alkylated PAHs GC/MS
B-150-P-20200529	L2037017-11	Alpha	0126	Product		X	X	X	X

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: Introduction to Environmental Forensics, 2nd Ed., B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.

PH-B-150-LNAPL-2023.12.05	L2402156-01	PACE Alpha	0331	Product		X	X	X	X
B-150	041206	Torkelson		Product	X				
B-150	19752-2	PACE Energy		Product	X				
TG-07-MW-06-230104	L2300359-01	Alpha	0290	Product		X	X	X	X
TG-07-MW-07-230209	L2307344-01	Alpha	0290	Product		X	X	X	X

Investigative methodology

Fingerprint Mosaics

Fingerprint Mosaics™ exhibited critical fingerprint features of the samples and served as technical references for sample-by-sample evaluations and review of diagnostic ratios (figures 1-5). Fingerprint Mosaics contain essential chemical information extracted from the analytical chemistry reports employed for this investigation and historical documents. Fingerprint Mosaics consist of the following elements:

- Chemical chromatograms from GC/FID methods. The chromatograms span the VOC and SVOC ranges for product samples and only the SVOC range for water and soil samples.
- Total Ion Chromatograms (TICs) served as analogs to the chemical chromatograms from the SVOC GC/FID methods – Relevant for SVOC Full Scan data from PACE Energy data.
- Color annotated bar graphs of VOC PIANO data. The bar graph contains a color key describing the chemical classes in the data.
- Color-annotated bar graphs of SVOC parent and alkylated PAH and SPAH data. The bar graphs contain color keys describing the chemical classes in the data.
- EICPs from the SVOC analysis representing diagnostic ion scan fingerprints for different petroleum biomarker classes – Alkylcyclohexanes (83 m/z); Bicyclanes (123 m/z); Terpanes (191 m/z); Steranes (217 m/z).

Residual range petroleum biomarkers, i.e., terpanes (191 m/z) and steranes (217 m/z) were included in the Mosaics only when present in the samples.

Results and Discussion

The gasoline refinery process and properties lines of evidence were applied based on well-established process forensics insights. These insights included historical knowledge of refiners' gasoline blending strategies of hydrocarbon feedstocks and additives over time[2]. The characterization of gasoline relied on the diagnostic description of alkylate and other Intermediate blendstock signatures. SVOC lines of evidence were based on the fingerprint aspects of PAHs, SPAHs, and light-distillate range biomarkers.

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[2] Stout, Scott A., Gregory S. Douglas, and Alan D. Uhler. "Automotive gasoline." Environmental Forensics Contaminant Specific Guide (2006): 165-531.

AOI-6 – Samples from B-150

The VOC ranges for all four samples collected from B-150 were enriched in benzene, toluene, and isopropyl benzene (Figures 1 to 3). The unusual dissolved phase signature and organic sulfur richness suggest that the sample may have exhibited a specialized reformate-type refinery intermediate. The SVOC ranges of four B-150 samples displayed a light distillate to significantly lower residual range signature relative levels. The SVOC range signatures related to the reformate intermediate were significantly enriched in benzothiophenes isomers (Figures 1 to 3). The PAH bar graphs for the B-150 samples exhibited pyrogenicity as enrichments of 4-6 ring PAHs and enrichments of parent and lesser alkylated 2-3 ring PAHs relative to their higher alkylated isomers (Figures 2 to 3).

The SVOC bar graph shows that the SVOC range petroleum exhibited a relatively high degree of pyrogenicity that may have been consistent with an MGP-type residue or other pyrolytic impacts from thermal stress associated with the refinery process. However, a consistent pyrogenic SVOC range signature in a sample without the reformate intermediate, i.e., TG07-MW-06-230104, indicates that the pyrogenic residue signature is derived from an environmental mixture and not associated with the reformate intermediate product that was dominant in the B-150 samples.

The more recently collected LNAPL from B-150 is presented on the bottom-oriented plots in Figures 2 and 3, while Figure 1 exhibits the B-150 samples collected in 2006 and 2016. Inspection of VOC and SVOC boiling ranges of petroleum shows that the chemical signatures representative of all four sampling dates – 2006, 2016, 2020, and 2023 are consistent. In 2023, a slight and marginal impact from weathering was notable in the VOC range as the depletion of benzene and toluene relative to isopropylbenzene (IPROPB) (Figure 3). In the most recently collected B-150 sample, a slight and marginal impact from weathering was also notable in the SVOC range as the depletions of parent naphthalene relative to C1 naphthalenes - the sum of 1 and 2 methylnaphthalenes (Figure 3). Regarding the potential release time for the reformate intermediate, the refinery intermediate signature was present in the subsurface in 2006, and the chemical signature was not altered by environmental forces through 2023. Either the free phase product has been isolated and prevented from evaporation, aqueous dissolution, or biodegradation in the subsurface, for whatever reason, or there exists a persistent release of the reformate intermediate.

AOI-6 – Samples from MW-06 and MW-07

Products from MW-6 and MW-7 significantly differed from each other. The VOC range of MW-06 was enriched considerably in ~nC5 to nC15 n-paraffins (Figure 4). The abundance of n-paraffins, absence of olefins, and sparseness of isoparaffins and monoaromatics indicate the presence of an ultra-light condensate crude feedstock in the VOC range of MW-06. Although significantly lower in abundance than the VOC range petroleum, the SVOC range of MW-06 exhibited a relatively high degree of pyrogenicity that may have been consistent with an MGP-type residue or other pyrolytic impacts from thermal stress associated with the refinery process.

The LPH from MW-07 exhibited an odd distribution of C3-C4 monoaromatics dominated by the isopropyl benzene ("IPROPB") compound (Figure 5). Furthermore, the distribution of hydrocarbons in MW-07 was not typical for finished gasoline. Factoring in the characteristics of the VOC range petroleum collected from the nearly B-150 location, it is my opinion that the VOC range for MW-07 was dominated by a reformate intermediate, mixed possibly with trimethylpentane isomers (orange bars) from an alkylate intermediate product (Figure 5). The SVOC range petroleum in MW-7 did not exhibit a pyrogenic signature, as was evident in the other samples collected (Figure 5). Instead, the SVOC range hydrocarbons in MW-07 contained a light distillate range petrogenic product that occurred at significantly lower levels in the sample relative to the VOC range refinery intermediate petroleum signature. The light distillate range petroleum product in the SVOC range may have been related to a Jet Fuel or another kerosene

range product. The significant depletion of n-paraffins (blue bars) relative to isoprenoids (red bars), in combination with the biodegraded aspect of the alkylcyclohexanes 83 m/z in Figure 5, indicates that the light distillate range petroleum was significantly weathered.

Conclusions

The VOC ranges of the samples collected from B-150 were dominated by a petroleum product enriched in benzene, toluene, and isopropyl benzene (Figures 1 to 3). The unusual dissolved phase signature and organic sulfur richness suggest that the sample may have exhibited a specialized reformate-type refinery intermediate. The SVOC range petroleum in B-150 samples exhibited a relatively high degree of pyrogenicity that may have been consistent with an MGP-type residue of high thermal stress refinery exposure. The weathering aspect of the reformate intermediate product was essentially unchanged from 2006 to 2023. MW-07 exhibited dominance of the reformate intermediate, likely mixing with an alkylate intermediate product or a severely biodegraded finished gasoline containing alkylate (Figure 5). MW-07 exhibited a very low-level light distillate range signature that was significantly weathered. MW-06 was dominated by a different petroleum product, consistent with straight-run gasoline or ultra-light crude oil-like petroleum products (Figure 4). As with the samples collected from B-150, MW-06 exhibited a very low level of a pyrogenic signature.

Upon receipt of additional information, I reserve the right to modify and supplement my opinions outlined in this report.

You may email questions or concerns to markcejas@chemquants.com regarding chemistry data or interpretation.

Respectfully submitted,

Mark Jonathan Cejas
Principal

Abbreviation	VOC Compound	Abbreviation	VOC Compound	Abbreviation	VOC Compound
3M1B	3-Methyl-1-butene	ECYP	Ethylcyclopentane	IBCYHX	Isobutylcyclohexane
ISOP	Isopentane	223TMP	2,2,3-Trimethylpentane	1M2EB	1-Methyl-2-Ethylbenzene
1P	1-Pentene	234TMP	2,3,4-Trimethylpentane	C10	Decane (C10)
2M1B	2-Methyl-1-Butene	233TMP	2,3,3-Trimethylpentane	TBUTB	tert-Butylbenzene
C5	Pentane	23DMHX	2,3-Dimethylhexane	124TMB	1,2,4-Trimethylbenzene
T2P	trans-2-Pentene	2MHP	2-Methylheptane	IBUTB	Isobutylbenzene
IPE	Isoprene	4MHP	4-Methylheptane	SBUB	sec-Butylbenzene
C2P	cis-2-Pentene	3MHP	3-Methylheptane	1M3IPROPB	1-Methyl-3-Isopropylbenzene
TBA	Tertiary Butanol	3EHX	3-Ethylhexane	1M4IPROPB	1-Methyl-4-Isopropylbenzene
22DMB	2,2-Dimethylbutane	T	Toluene	123TMB	1,2,3-Trimethylbenzene
4M1P	4-Methyl-1-pentene	2MTHIO	2-Methylthiophene	1M2IPROPB	1-Methyl-2-Isopropylbenzene
CYP	Cyclopentane	T14DMCYHX	1,4-Dimethylcyclohexane (trans)	IA	Indane
23DMB	2,3-Dimethylbutane	3MTHIO	3-Methylthiophene	13DEB	1,3-Diethylbenzene
2MP	2-Methylpentane	1O	1-Octene	1M3PROPB	1-Methyl-3-N-Propylbenzene
MTBE	Methyl tert butyl ether	C8	Octane	IE	Indene
3MP	3-Methylpentane	T12DMCYHX	1,2-Dimethylcyclohexane (trans)	1M4PROPB	1-Methyl-4-N-Propylbenzene
1H	1-Hexene	EDB	1,2-Dibromoethane	NBUB	n-Butylbenzene
C6	n-Hexane	C2O	cis-2-Octene	12DM4EB	1,2-Dimethyl-4-Ethylbenzene
IPROE	Isopropyl Ether	IPCYP	Isopropylcyclopentane	12DEB	1,2-Diethylbenzene
T2H	trans-2-Hexene	12DMCYHX	1,2-Dimethylcyclohexane (cis)	1M2PROPB	1-Methyl-2-N-Propylbenzene
2M2P	2-Methyl-2-pentene	25DMHP	2,5-Dimethylheptane	14DM2EB	1,4-Dimethyl-2-Ethylbenzene
C2H	cis-2-Hexene	35DMHP	3,5-Dimethylheptane	C11	Undecane
ETBE	Ethyl-Tert-Butyl-Ether	33DMHP	3,3-Dimethylheptane	13DM4EB	1,3-Dimethyl-4-Ethylbenzene
22DMP	2,2-Dimethylpentane	114TMCYHX	1,1,4-Trimethylcyclohexane	13DM5EB	1,3-Dimethyl-5-Ethylbenzene
MCYP	Methylcyclopentane	23DMHP	2,3-Dimethylheptane	13DM2EB	1,3-Dimethyl-2-Ethylbenzene
24DMP	2,4-Dimethylpentane	34DMHP	3,4-Dimethylheptane	12DM3EB	1,2-Dimethyl-3-Ethylbenzene
223TMP	2,2,3-Trimethylbutane	4MO	4-Methyloctane	1245TMB	1,2,4,5-Tetramethylbenzene
EDC	1,2-Dichloroethane	2MO	2-Methyloctane	1235TMB	1,2,3,5-Tetramethylbenzene
33DMP	3,3-Dimethylpentane	EB	Ethylbenzene	NPYB	N-Pentylbenzene
CYHX	Cyclohexane	2ETHIO	2-Ethylthiophene	1234TMB	1,2,3,4-Tetramethylbenzene
2MHX	2-Methylhexane	3MO	3-Methyloctane	13DM5TBUB	1,3-Dimethyl-5-tert-Butylbenzene
B	Benzene	33DEP	3,3-Diethylpentane	C12	Dodecane (C12)
23DMP	2,3-Dimethylpentane	PMX	p/m-Xylene	135TEB	1,3,5-Triethylbenzene
THIO	Thiophene	1N	1-Nonene	N	Naphthalene
11DMCYP	1,1-Dimethylcyclopentane	T3N	trans-3-Nonene	BTHIO	Benzothiophene
3MHX	3-Methylhexane	C3NE	cis-3-Nonene	124TEB	1,2,4-Triethylbenzene
TAME	Tertiary-Amyl Methyl Ether	C9	Nonane (C9)	HYB	Hexylbenzene
C13DMCYP	1,3-Dimethylcyclopentane (cis)	STRE	Styrene	MMT	MMT
3EP	3-Ethylpentane	OX	o-Xylene	C13	Tridecane
T13DMCYP/2M1HX	1,3-DMCP (trans)/2-Methyl-1-hexene	2N	2-Nonene	2MN	2-Methylnaphthalene
1HP/T12DMCYP	1-Heptene/1,2-DMCP (trans)	IPROCYHX	Isopropylcyclohexane	1MN	1-Methylnaphthalene
224TMP	Isooctane	IPROPB	Isopropylbenzene	C14	Tetradecane (C14)
T3H	trans-3-Heptene	33DMO	3,3-Dimethyloctane	C15	Pentadecane
C7	Heptane	NPRPPB	n-Propylbenzene		
T2H	trans-2-Heptene	2MNON	2-Methylnonane		
C2H	cis-2-Heptene	3MNON	3-Methylnonane		
22DMHX	2,2-Dimethylhexane	1M3EB	1-Methyl-3-Ethylbenzene		
MCYHX	Methylcyclohexane	1M4EB	1-Methyl-4-Ethylbenzene		
25DMHX	2,5-Dimethylhexane	135TMB	1,3,5-Trimethylbenzene		
24DMHX	2,4-Dimethylhexane	1D	1-Decene		

Table 1. Table of VOC nomenclature and abbreviations.

Abbreviation	SVOC Compound	Abbreviation	SVOC Compound
D0	cis/trans-Decalin	NBT1	C1-Naphthobenzothiophenes
D1	C1-Decalins	NBT2	C2-Naphthobenzothiophenes
D2	C2-Decalins	NBT3	C3-Naphthobenzothiophenes
D3	C3-Decalins	NBT4	C4-Naphthobenzothiophenes
D4	C4-Decalins	BA0	Benz(a)anthracene
N0	Naphthalene	C0	Chrysene/Triphenylene
N1	C1-Naphthalenes	BC1	C1-Chrysenes
N2	C2-Naphthalenes	BC2	C2-Chrysenes BS
N3	C3-Naphthalenes	BC3	C3-Chrysenes
N4	C4-Naphthalenes	BC4	C4-Chrysenes
BT0	Benzothiophene	BBF	Benzo(b)fluoranthene
BT1	C1-Benzo(b)thiophenes	BJKF	Benzo(j)+(k)fluoranthene
BT2	C2-Benzo(b)thiophenes	BAF	Benzo(a)fluoranthene
BT3	C3-Benzo(b)thiophenes	BEP	Benzo(e)pyrene
BT4	C4-Benzo(b)thiophenes	BAP	Benzo(a)pyrene
B	Biphenyl	PER	Perylene
DF	Dibenzofuran	IND	Indeno(1,2,3-cd)pyrene
ACY	Acenaphthylene	DA	Dibenz(a,h)+(a,c)anthracene
ACE	Acenaphthene	GHI	Benzo(g,h,i)perylene
F0	Fluorene	2MN	2-Methylnaphthalene
F1	C1-Fluorenes	1MN	1-Methylnaphthalene
F2	C2-Fluorenes	26DMN	2,6-Dimethylnaphthalene
F3	C3-Fluorenes	235TMN	2,3,5-Trimethylnaphthalene
DBT0	Dibenzothiophene	4MDT	4-Methyldibenzothiophene(4MDT)
DBT1	C1-Dibenzothiophenes BS	2MDT	2/3-Methyldibenzothiophene(2MDT)
DBT2	C2-Dibenzothiophenes	1MDT	1-Methyldibenzothiophene(1MDT)
DBT3	C3-Dibenzothiophenes	3MP	3-Methylphenanthrene (3MP)
DBT4	C4-Dibenzothiophenes	2MP	2-Methylphenanthrene (2MP)
P0	Phenanthrene	2MA	2-Methylanthracene (2MA)
P1	C1-Phenanthrenes/Anthracenes	9MP	9/4-Methylphenanthrene (9MP)
P2	C2-Phenanthrenes/Anthr BS	1MP	1-Methylphenanthrene (1MP)
P3	C3-Phenanthrenes/Anthracenes	BbFl	Benzo(b)fluorene
P4	C4-Phenanthrenes/Anthracenes	BcFl	7H-Benzo(c)fluorene
A0	Anthracene	2MPy	2-Methylpyrene
CAR	Carbazole	4MPy	4-Methylpyrene
FL0	Fluoranthene	1MPy	1-Methylpyrene
PY0	Pyrene	R	Retene
FP1	C1-Fluoranthenes/Pyrenes		
FP2	C2-Fluoranthenes/Pyrenes		
FP3	C3-Fluoranthenes/Pyrenes		
FP4	C4-Fluoranthenes/Pyrenes		
NBT0	Naphthobenzothiophenes		

Table 2. Table of SVOC nomenclature and abbreviations.

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Santa Barbara, CA 93101
www.ChemQuants.com

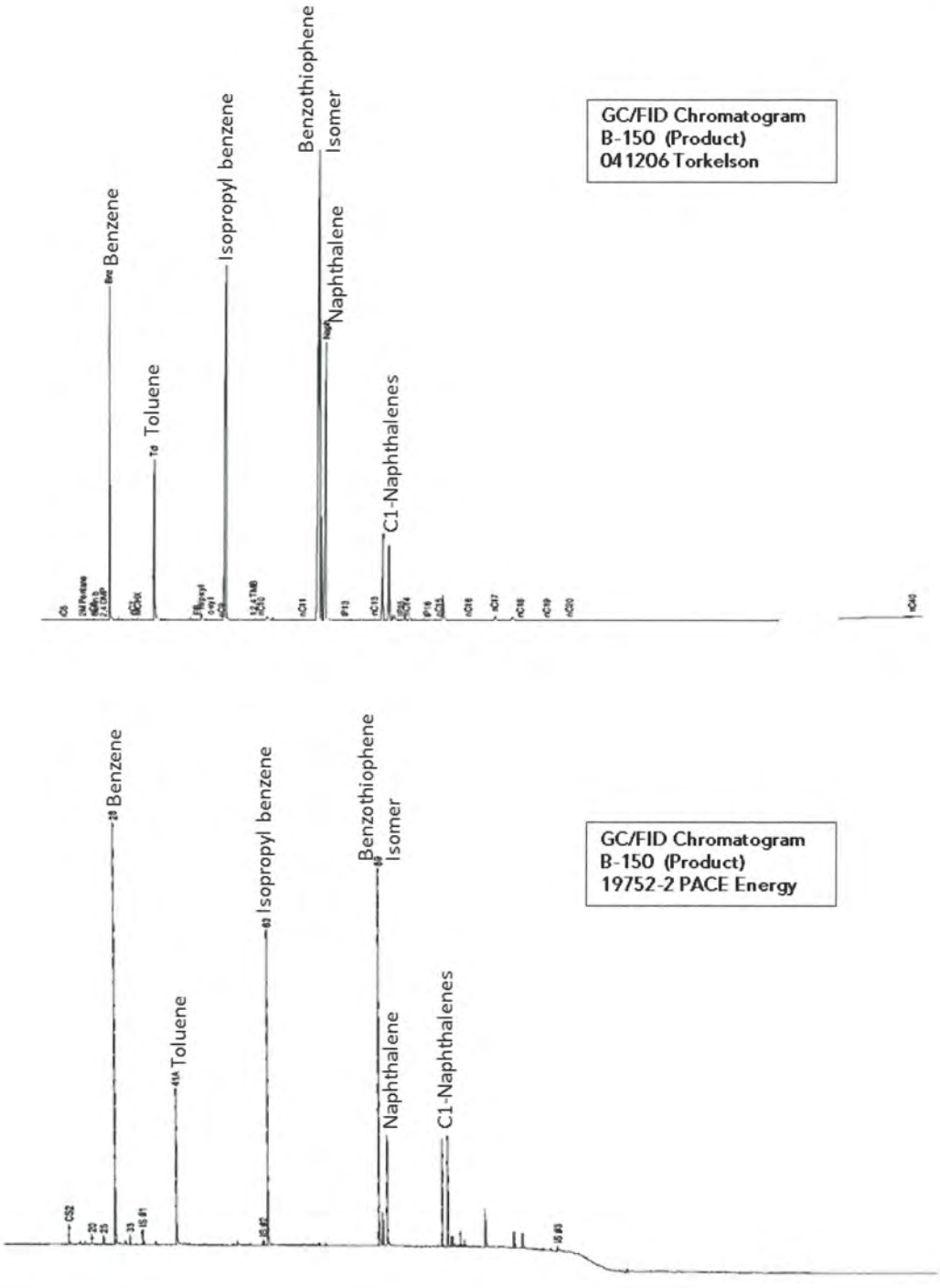

Figure 1. Fingerprint Mosaics™ for product samples.

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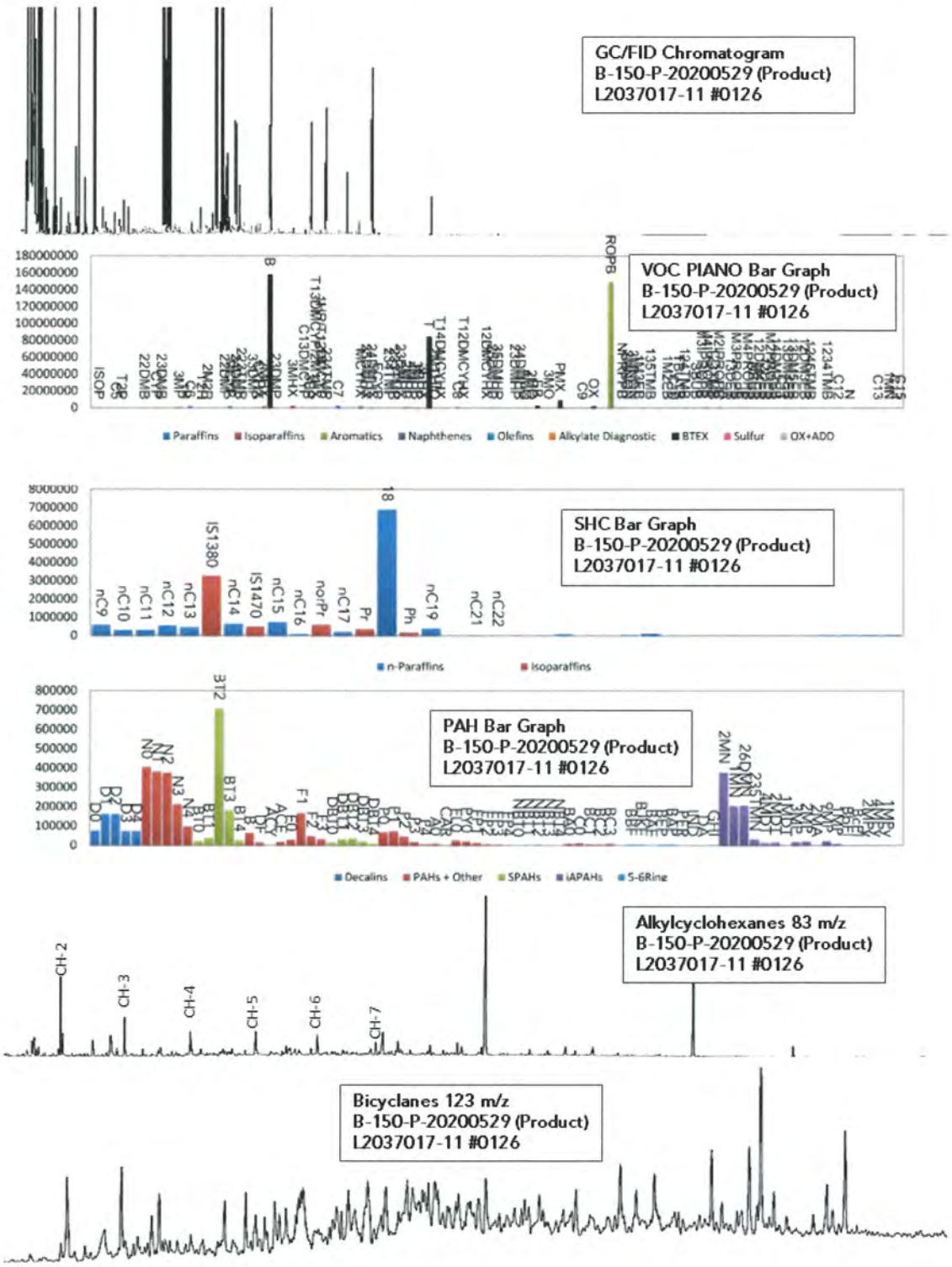

Figure 2. Fingerprint Mosaics™ for product samples.

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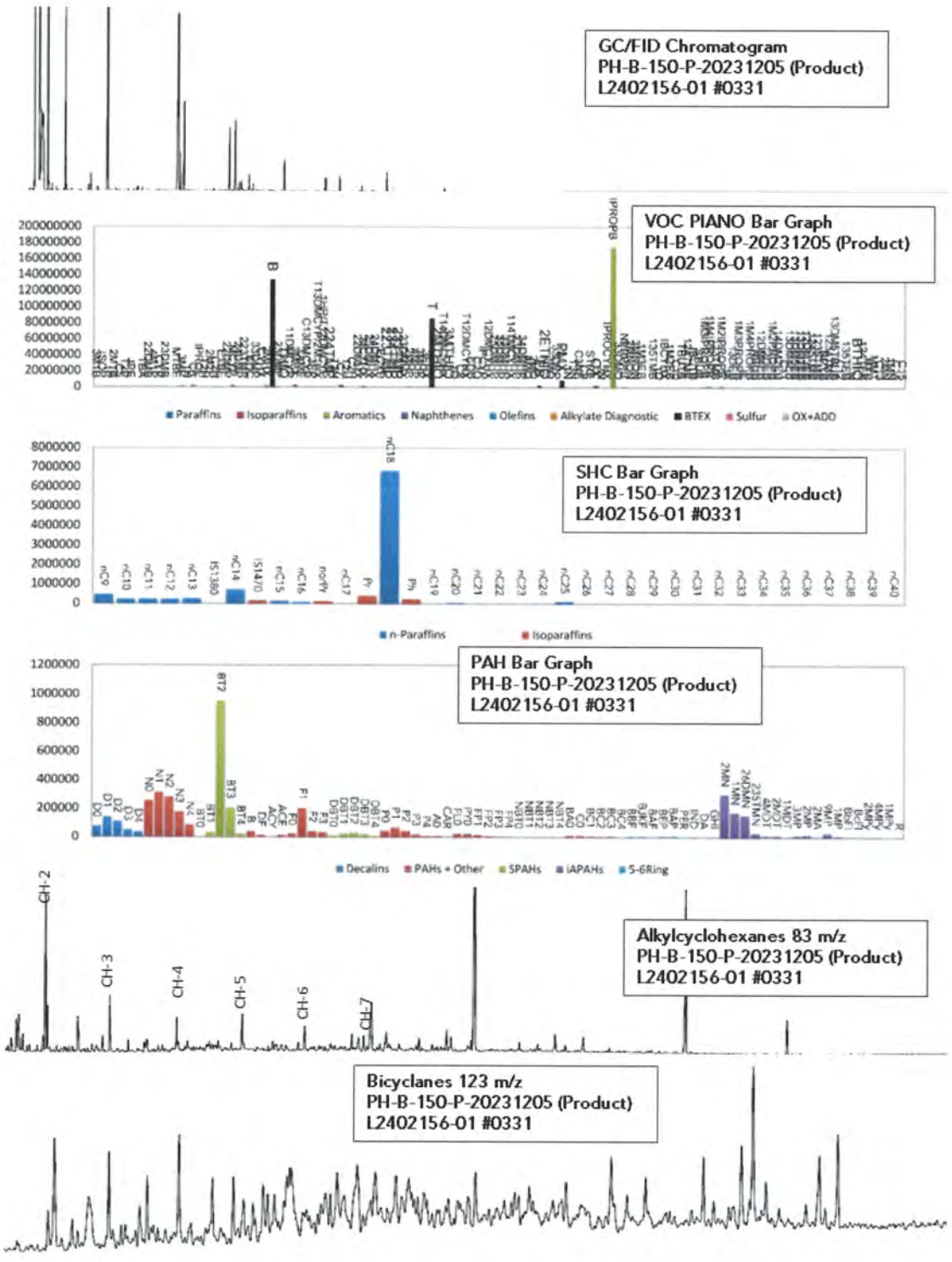

Figure 3. Fingerprint Mosaics™ for product samples.

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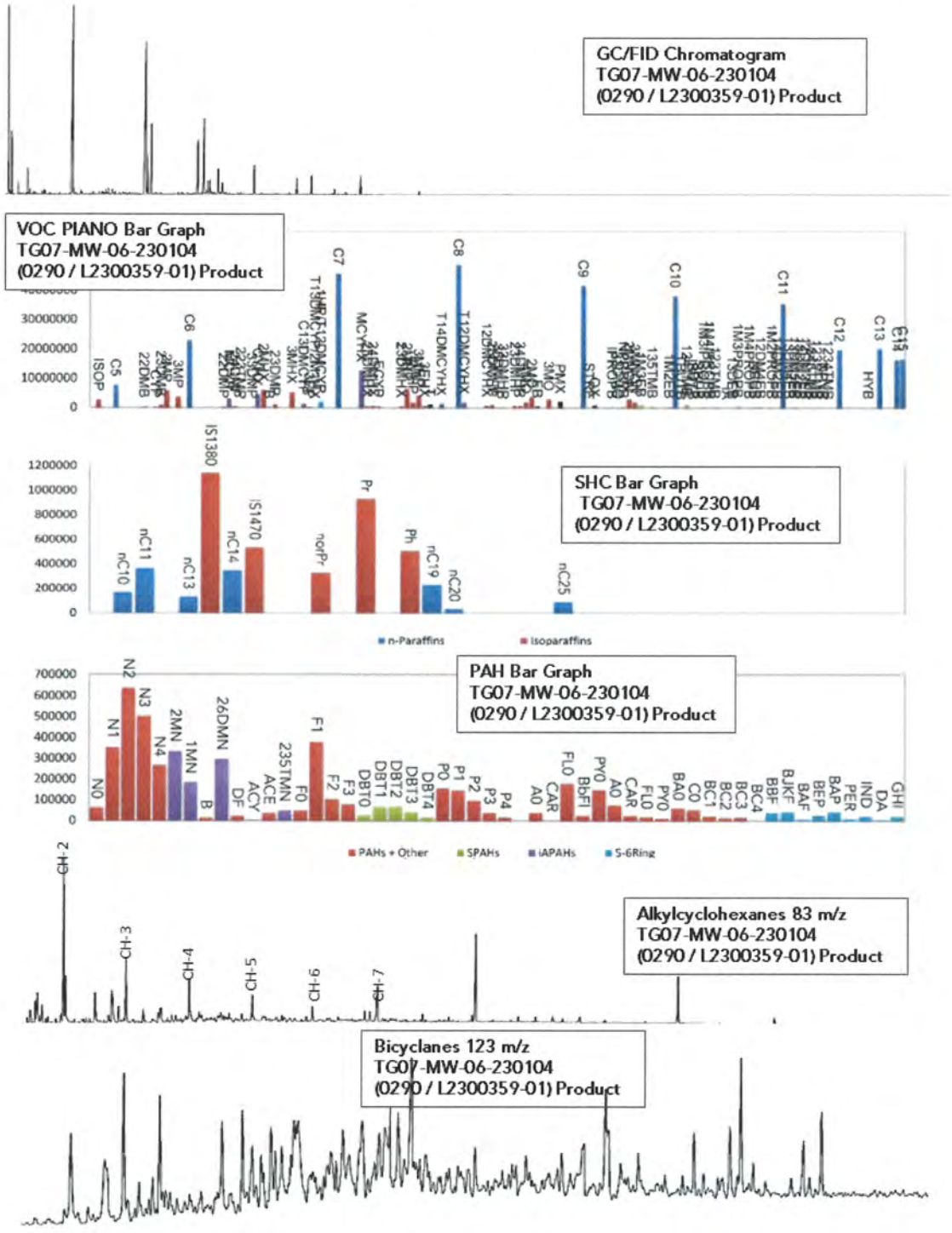

Figure 4. Fingerprint Mosaics™ for product samples.

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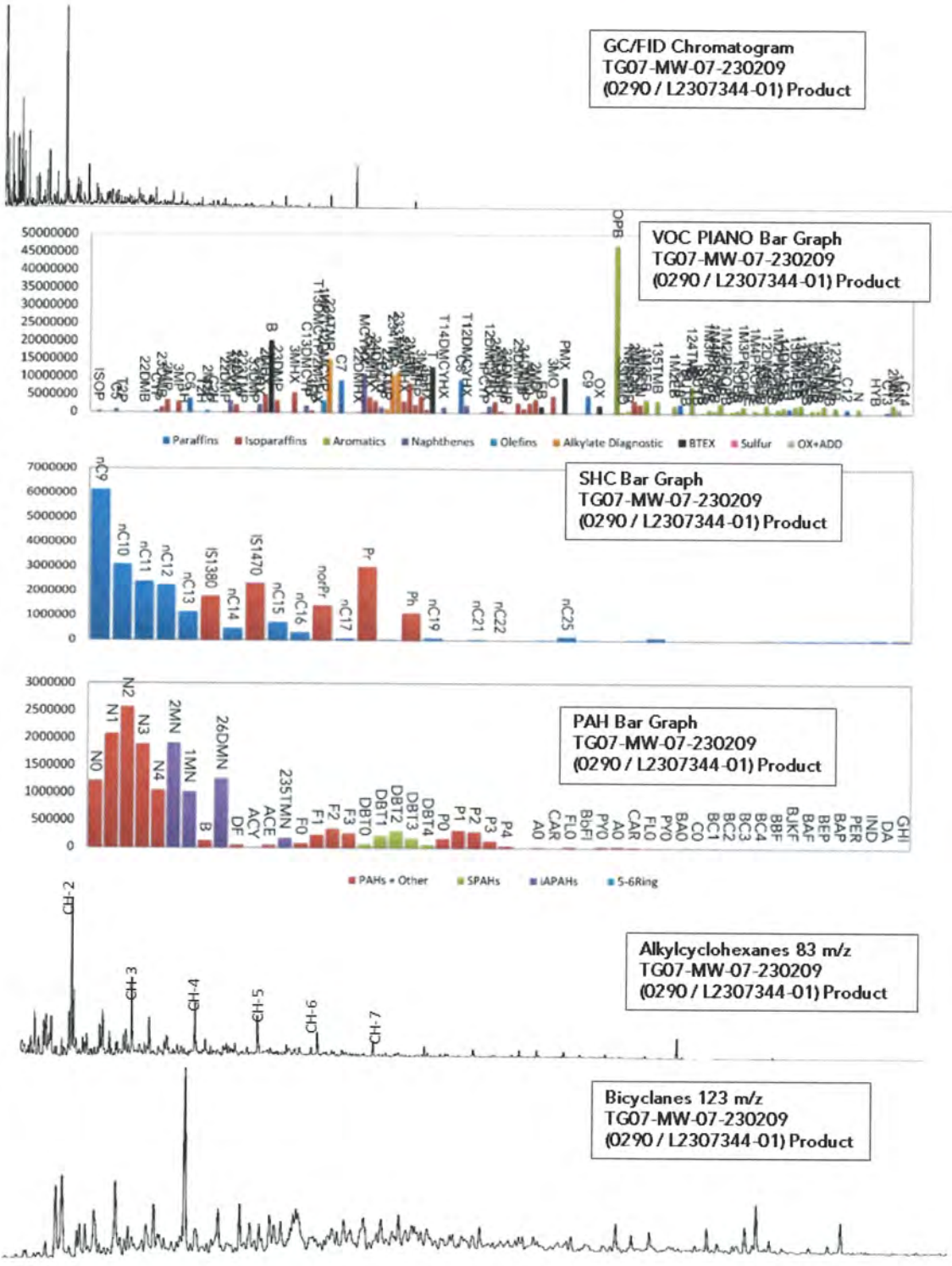

Figure 5. Fingerprint Mosaics™ for product samples.

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www.ChemQuants.com

Interpreter

Appendix A

curriculum vitae – Mark Jonathan Cejas

Mark Jonathan Cejas

Current Position
Principal/Founder – ChemQuants, LLC.

Markcejas@chemquants.com

www.ChemQuants.com

Years Experience

12+ Years – Environmental Forensics Consultant & Expert

20+ Years – Analytical Chemist

Education

- MS, Analytical Chemistry, Florida International University, 2009
- B.S., Chemistry & Biochemistry, Florida International University, 2003
- B.S., Environmental Science, Florida International University, 2003

Professional Affiliations

- Environmental Forensics Session Chair SCIX 2019, Palm Springs, CA
- Editorial Board for Environmental Forensics Journal
- American Chemical Society (ACS)
- Society of Environmental Toxicology & Chemistry (SETAC)

Mr. Cejas specializes in problem-solving with environmental forensics tools for client teams at contaminated sites. Client teams include environmental consultants, litigation experts, oil and gas companies, property developers, regulators, and insurance companies. Mr. Cejas's experience with contaminated sites spans most U.S. states, and in all instances, his efforts led to defensible outcomes from the principal Environmental Forensics questions – Who or what caused the contamination, how did the contamination occur, are the test results valid, and wherever possible when did the contamination occur?

Mr. Cejas's specialties include chemical release investigations on coastal waterways, subsurface environments at petroleum terminals, fueling stations, airports, dry cleaners, brownfield reclamation properties, and industrial sites. Mr. Cejas has directed client teams to favorable outcomes in pollution liability management problems and, in many instances, success from litigious disputes at contaminated sites with the country's highest-tier environmental forensics experts and legal teams.

Expert Advisory

Mr. Cejas routinely services client teams with expert testimonials that involve chemical fingerprinting, fuel release age dating, and "big environmental data" chemometrics and data visualization. Mr. Cejas has written over 100 petroleum forensics expert reports regarding fugitive releases of gasoline, distillate fuels, heavy fuel oils, residual petroleum products, waste oils, solvents, coal tars, renewable fuels, crude oils, petroleum vapors, and residues from Manufactured Gas Plants (MGPs). A specific type of forensics report may be available in redacted form upon request. Specifically related to petroleum fuels, Mr. Cejas is an expert in the characterization and time of fugitive release of gasoline and other fuels in subsurface soil and groundwater. Mr. Cejas firmly adheres to scientific principles to support reasonably accurate conclusions. His approach to petroleum forensics has yielded a proven track record of success.

Beyond petroleum contamination, Mr. Cejas has driven successful outcomes for client teams in aquatic sediments and waterways impacted by legacy contaminants such as PCBs, Dioxins/Furans, etc., from industrial process sources. Mr. Cejas often works with client teams to objectively unravel chemical mixtures for chemical source differentiation and cost allocation in pollution liability disputes among multiple potentially responsible parties.

Selected Projects

Shoecraft & Associates – Multi-receptor & Multi-PRP Environmental Forensics Investigation of a Landfill / Industrial / Residential Environs – San Diego, California – Testifying Expert at Federal Trial

Mr. Cejas is retained as an environmental forensics testifying expert on behalf of a plaintiff, a prominent developer of master-planned communities. The ongoing investigation involves multiple potential contaminant sources, environmental receptors, and multiple potentially responsible parties (PRPs).

Greenberg Traurig, LLP – Chemometrics of PCBs in Bay Sediments – Confidential Location – Retained Expert

A forensic evaluation was performed to determine potential Polychlorinated Biphenyls (PCB) sources in marine sediments. Mr. Cejas developed data analysis and interpretation strategies to assess the potential contributions of multiple PRPs. Mr. Cejas conducted industrial source characterization for remedial cost apportionment with an integrated

multivariate analysis approach, using Polytopic Vector Analysis (PVA) for data exploration and t-Distributed Stochastic Neighbor Embedding (t-SNE) for data visualization.

Cox – Colvin & Associates – Petroleum Contamination Dispute Among Oil & Gas Companies – Retained Expert

A forensic evaluation is performed to determine the composition, spatial distribution, and time of release of petroleum contamination at a refinery previously owned by a different Oil and gas company. Mr. Cejas is a retained expert supporting a significant cost allocation among stakeholders.

Neuner Pate – Chemical Forensics in a Salt Dome – Napoleonville, Louisiana – Retained Expert

The client was a midstream oil and gas company allegedly responsible for causing catastrophic damage to a salt dome reservoir on an adjacent property. Mr. Cejas was a retained forensic expert for the client. Expert objectives included evaluating historical environmental conditions and chemical data, developing chemical databases, overseeing laboratory coordination for light gas stable isotopes analysis, conducting forensic investigations, and developing expert opinions. His expert report supplied factual evidence that led to his client's success.

JHA Consulting Engineers – Jet Fuel Forensics at a Main Airport – Los Angeles, CA – Retained Expert

The client was a major international airline allegedly responsible for contaminating the airport's groundwater. Mr. Cejas applied defensible environmental forensics techniques to historical Site-related and chemical data, including all available Jet Fuel records and groundwater samples. Mr. Cejas generated multiple lines of evidence in the investigation that delineated historical releases with minimal relationship to a recently suspected fugitive release of Jet Fuel. The objective and unbiased forensic investigation led to a favorable outcome for the client team.

Krazan-VEIR – Aqueous Phase Hydrocarbons Forensics at Two Gasoline Stations – Wofford Heights & Orange Cove, California – Expert Advisory

In response to alleged fugitive fuel releases, forensic evaluations of groundwater samples were undertaken at two gasoline station sites. Both projects only sampled groundwater samples, so Mr. Cejas developed similar chemical analysis strategies to explore VOC and SVOC hydrocarbon range signatures. For both projects, the comprehensive forensic studies revealed that the groundwater contamination originated not from the gasoline station but from off-site industrial and car wash facilities adjacent to the properties. Mr. Cejas's report gave the client team the information to recommend alternative actions and eliminated a significant cost burden of remediation for the client.

Linebach & Funkhouser – Forensic Study of Petroleum Vapor Intrusion to a Residential Community – Harlan, Kentucky – Retained Expert

Mr. Cejas applied petroleum forensics and geochemistry principles to evaluate vapor phase hydrocarbons from indoor, sub-slab, and outdoor air samples. The forensic investigation generated multiple lines of evidence that presented an objective fingerprinting model supporting multiple (primarily unexpected) vapor phase hydrocarbon sources and pathways to indoor air. The forensic study provided data-driven insights, which enabled a targeted approach to addressing and mitigating vapor intrusion risk to the community. Mr. Cejas's forensic report enabled the client team to work effectively with the KYDEP in their objective position. Consequently, Mr. Cejas's report was critical in Kentucky's Brownfield Program issues.

Wood – Sitewide Characterization and Age Dating of Diesel Fuel at Amtrak Maintenance Facility – Ivy City Railyard – Washington, D.C. – Expert Advisory

Mr. Cejas led a sitewide forensic investigation at an Amtrak maintenance facility. The initiative was driven by the need to understand the nature and extent of diesel fuel contamination. Specifically, to understand the historical and potentially recent subsurface impacts of fuel by all diesel combustion engines utilized on-site. Mr. Cejas's expert report addressed concerns about potential environmental risks from historical and current activities.

Pilot Geological, PLLC – Two Dry Cleaners, a Client's Property, & One Major Plume – Who Did It? – Durham, North Carolina - Expert Advisory

Mr. Cejas applied environmental forensics techniques in a groundwater pollution liability dispute between a Site represented by the client team and two adjacent Dry Cleaners facilities with different operational histories. Mr. Cejas's forensic report proved the contamination was migrating from one dry-cleaning facility, absolving the client team from pollution liability and remediation cost burden.

Orion Environmental, Inc. - A Gasoline Station, A Large Historic Gasoline Plume & Questions of Natural Source Zone Depletion – Long Beach, California - Expert Advisory

Mr. Cejas conducted a forensic evaluation focused on characterizing the extent of a significant historical plume of gasoline from a gasoline station. In addition to assessing the potential presence of a recent fugitive release of gasoline on-site, Mr. Cejas undertook a molecular forensic-focused assessment of natural source zone depletion (NSZD) on the client team's Site. Mr. Cejas's forensic report ruled out recent gasoline releases during a critical period in question. Also, the forensic report provided an additional line of evidence that NSZD was occurring at the Site. The report successfully supported the client team on both fronts.

Alta Science & Engineering, Inc. – A Fueling Stations, a Known Historic Release, & Questions of a Recent Fugitive Release – Lewiston, Idaho - Expert Advisory

Forensic evaluations of groundwater samples were undertaken at a fueling station in response to alleged gasoline releases. Mr. Cejas developed a laboratory methods and chemical analysis strategy to explore VOC hydrocarbon range signatures. The comprehensive forensic studies revealed that the groundwater contamination was not from any fugitive gasoline release during the 11 years of groundwater monitoring at the Site. Instead, the forensic investigation led to defensible conclusions that the elevated concentrations of regulated gasoline hydrocarbons occurring in the wells were associated with a documented historical gasoline release. Mr. Cejas's report aided the client team with a clean-up approach that significantly reduced the cost burden on the property owner.

Givaudan – Chemical Source and Transport Assessment / Passaic River– Retained Expert

Mr. Cejas was retained as a forensic expert, providing alternative interpretations of conditions and contaminant sources of PCDD/Fs along the Passaic River. Mr. Cejas developed novel data analysis and interpretation strategies to assess the potential of upstream contributions based on chemical forensics, multivariate ordination and classification techniques, GIS, and 3D data visualization perspectives. Mr. Cejas's expert work was among the most comprehensive forensic studies of PCDD/Fs in the history of contaminant studies in the Passaic River.

EarthNet – Age Dating of Petro/Bio-Diesel Fuel – Glade Spring, VA - Expert Advisory

Mr. Cejas applied environmental forensics techniques to determine the release time for a service station's mixed biodiesel/petrodiesel fuel. The principal question posed by the client

team, financed by the insurance carrier, was whether the groundwater contamination derived from a historic release of the mixed fuel or an ongoing slow leak. Mr. Cejas's forensic report indicated that a leaking system did not cause the contamination. Instead, it was determined that the release of biodiesel/petrodiesel fuel mixture from an earlier documented system failure caused the contamination. Mr. Cejas's report enabled the client team, which included the client, the Virginia Department of Environmental Quality (VDEQ), and the insurance carrier, to move forward confidently with data-driven objectivity to achieve practical remediation at the Site.

Core – Forensics at a Gasoline Station – Fingerprinting Source Diagnostics Leading to 100% Coverage by Insurance Claim, Carnegie, PA - Expert Advisory

Mr. Cejas led the client team to success with applications of environmental forensics techniques that included powerful molecular and isotope-based fingerprinting diagnostics for gasoline station forensics and deep reviews of historical records that included decades of routine chemical monitoring. The forensic objective involved determining the origin and time of gasoline release in a dispute between two gasoline station properties and an insurance carrier. Mr. Cejas's forensic report was instrumental in removing the remediation cost burden from the client team and maintaining 100% coverage by the insurance carrier. In addition, Mr. Cejas's report paved an expedited path toward regulatory closure by year-end.

Stantec – Condensate Crude Oil Forensics at a Major Crude Oil Hub in North America – Hardisty Terminal – Canada – Expert Advisory

Mr. Cejas led the client to success in differentiating condensate crude oil releases at a significant crude oil hub and storage facility in North America. Mr. Cejas designed a chemistry methods strategy with sophisticated methods for hydrocarbon fingerprinting that involved PIANO molecular fingerprinting and custom compound-specific isotope analysis (CSIA). Regarding data science, Mr. Cejas applied advanced chemometric techniques that involved integrated multivariate and high-dimensional data visualization techniques. Mr. Cejas's expert report effectively differentiated chemical sources at a large site involving many condensate crude oil releases.

Stantec – Application of Petroleum Forensics to Inform Finite-difference Flow Models for Remedial Cost Apportionment among Multiple Stakeholders – Philadelphia, PA – Expert Advisory

Mr. Cejas is the petroleum forensics expert supporting refinery-wide delineations of subsurface contamination plumes. Multiple lines of evidence are applied to include VOC and SVOC range molecular chemistry methods, compound-specific isotope (CSIA) methods for conventional and non-conventional analytes, and source-specific wastewater tracers, e.g., sucralose. The primary objectives for the forensics investigations were to inform Finite-difference Flow Models to enhance pollution source diagnostics. Mr. Cejas is the resident Environmental Forensic expert advisor supporting all stakeholders in a refinery-wide remedial cost apportionment between multiple stakeholders.

Traveler's Insurance – Development of First Order Kinetics Model for the Time of Release Derivation of a Natural Gas Pipeline – Bryan, Texas – Retained Expert

Mr. Cejas applied petroleum forensics and geochemistry principles to estimate the onset of a natural gas pipeline release that impacted a residential property zone, causing vapor intrusions and groundwater contamination risks. Compound Specific Isotope Analysis (CSIA) of light gasses was applied for contaminant source characterization. Geochemistry principles and techniques were applied to assess methane's oxidization and physical stripping relative to ethane. In contrast, first-order kinetics principles were applied to

estimate when the natural gas pipeline failed. The result of the objective investigation was utilized for decision-making in an insurance claim.

Infinity Solutions Group – Chemometrics of PCBs in Sediments (Swan Lake) – Portland, Oregon – Retained Expert

A forensic evaluation was performed to determine potential Polychlorinated Biphenyls (PCB) sources in lake sediments. Mr. Cejas conducted source characterization and their mixing apportionment with an integrated multivariate analysis approach, using Polytopic Vector Analysis (PVA) for data exploration and t-Distributed Stochastic Neighbor Embedding (t-SNE) for data visualization.

Haley & Aldrich– PAH Source Differentiation Between Historical MGP and Significant Urban Influences for Sediments in San Francisco Bay – Expert Advisory

A forensic evaluation was performed to determine sources of polycyclic aromatic hydrocarbons (PAHs) in nearshore sediments in a portion of the northern waterfront of San Francisco Bay, California. The focus of the evaluation was PAH composition in sediments and, in particular, the presence of potential point and nonpoint petrogenic and pyrogenic source types from contaminants associated with manufactured gas plant (MGP) operations. Mr. Cejas conducted source characterization with an integrated multivariate analysis approach, using Polytopic Vector Analysis (PVA) for data exploration and t-Distributed Stochastic Neighbor Embedding (t-SNE) for data visualization. Mr. Cejas's results provided the client team with a statistically based "map" of different contaminant source types and their mixing profiles in the bay sediments.

Pinnacle Engineering – Discovery of a Historic Waste Plume, not the Suspected Gasoline Plume from a UST Release, Montana – Expert Advisory

Mr. Cejas's forensic objective was to characterize the free product of automotive gasoline that mysteriously re-emerged after 5 years of being undetected in the subsurface. A comprehensive chemical characterization of gasoline range hydrocarbons and an exploration of unknown chemistry led to the discovery of specific industry tracers that identified a waste plume from a historic asphalt refinery. Consequently, the client was absolved from the significant cost burden of remediation.

Cardno – Age Constraining a Remobilized LNAPL – Santa Barbara, California – Retained Expert

An earthquake caused a tank rupture in the mid-1980s. The re-emergence of LNAPL more than twenty years later triggered a forensic age-constraining investigation. Mr. Cejas served as the third-party expert in the matter. His expert report supplied factual evidence that led to his client team's success.

B.P. – Petroleum Geochemistry Review of Deepwater Sediments Subjected to Toxicity Tests – NRDA – Retained Expert

Mr. Cejas conducted a petroleum geochemistry review of deep sediment chemistry near an offshore oil well. The data analysis strategy included a review of petroleum biomarker biodegradation potential, geospatial visualization of diagnostic chemical ratios, traditional oil fingerprinting techniques, and toxicity test comparisons with *Leptocheirus plumulosis*. The report was for Cardno's Natural Resource Damage Assessment on behalf of B.P. for the Deepwater Horizon incident in the Gulf of Mexico.

B.P. – Spatial and Temporal Distribution of PAH Fingerprints in Oysters – NRDA – Retained Expert

Mr. Cejas developed a data analysis strategy to investigate PAH fingerprints' spatial and temporal distribution in oyster tissue. Polytopic Vector Analysis (PVA) was applied to discover chemical source' end members' and their mixing proportions in natural samples.

The report was conducted for Cardno's Natural Resource Damage Assessment on behalf of B.P. for the Deepwater Horizon incident in the Gulf of Mexico.

Cardno –Environmental Forensics Data Scientist – Deepwater Horizon Oil Spill - Gulf Of Mexico, Louisiana – Retained Expert

Mr. Cejas was the chief data scientist for Petroleum Forensics investigations for Cardno on the Deepwater Horizon Oil Spill in support of B.P. Mr. Cejas worked with multidisciplinary teams of scientists and engineers for the Natural Resource Damage Assessment (NRDA). As the principal environmental forensics data scientist, Mr. Cejas's responsibilities spanned the design and management of analytical chemistry data logistics through the complete life cycle of the largest oil spill in U.S. history - chemical sampling, chemical data acquisition, chemistry database management, quality assurance, and control, and chemometrics investigations. Furthermore, Mr. Cejas supported Cardno's principal forensic expert in designing statistical data analysis techniques to differentiate spilled petroleum from other environmental hydrocarbon signatures. Mr. Cejas's interpretive reports and presentations were critical tools for communicating facets of oil contamination to the client, other stakeholders, and litigation teams from the context of environmental forensics.

Publications

- Time of Release Estimate for Contained Gas in the Subsurface – A Chemical Data Strategy (Article Accepted) Environmental Forensics.
- PAH Source Differentiation between Historical MGP and Significant Urban Influences for Sediments in San Francisco Bay. Marine Pollution Bulletin 166 (2021): 112248.
- Integrated Chemometric Assessment PCDD/F Contamination and Sources in the Passaic River, New Jersey. (Article in Review) Environmental Forensics.
- Chemometric Mapping of Polychlorinated Dibenzo-p-Dioxin (PCDD) and Dibenzofuran (PCDF) Congeners from the Passaic River, NJ: Integrated Application of RSIMCA, PVA, and t-SNE. Environmental Forensics 22.1-2 (2021): 155-171.
- Forensic Problem-solving in the Subsurface with Multiple Lines of Evidence – 3 Case Studies. SCIX 2019. October 13-18, Palm Springs, CA.
- Integrated Application of RSIMCA, tSNE, and PVA for Chemometric mapping of PCDD/F congeners. Battelle Tenth International Conference on the Remediation and Management of Contaminated Sediments (2019). February 11-14, New Orleans, LA.
- Integrated Chemometric Assessment PCDD/F Contamination and Sources Passaic River, NJ. Battelle Tenth International Conference on the Remediation and Management of Contaminated Sediments (2019). February 11-14, New Orleans, LA.
- Integrated Application of RSIMCA, tSNE, and PVA for Chemometric mapping of PCDD/F congeners. International Network of Environmental Forensics (INEF 2018). Annual Meeting – Salt Lake City, UT.
- Nearshore Sediment Exposure to Louisiana Crude Oil: Spatial and Temporal Patterns in the Northern Gulf of Mexico. 33rd SETAC Annual Meeting – Long Beach, California.
- Post-Deepwater Horizon Toxicity Study of Gulf of Mexico Sediments using the Amphipod Leptocheirus Plumulosus. 33rd SETAC Annual Meeting – Long Beach, California.
- Confirmation of Non-MC-252 Oil in Water Column Samples Southwest of the Wellhead using Hydrocarbon Biomarkers and PAH ratios. SETAC Focused Topic Meeting 2011, Pensacola Beach, Fl.
- Determining Optimal Electrospray Ionization of Sucralose – An Application of Response Surface Modeling and Weighted Least Squares Regression for a Robust Determination of Detection and Quantification Limits. FAME 2009, Orlando, Florida.
- Improved analytical method for the determination of unstable and volatile organophosphorus pesticides in organic-rich soil/sediment and fish tissue matrices.

American Chemical Society 80th Florida Annual Meeting and Exposition FAME 2004, Orlando, Florida.

- Paleo-reconstruction of hydrocarbon sources and their contribution to the pollution loads of wetlands in the Florida Keys and the Southern Everglades. 24th SETAC Annual Meeting - Austin, Texas.
- Endosulfan Sulfate in Fish Tissue from Everglades National Park: Tales of an Unregulated Pesticide Metabolite. GEER 2008 – Naples, Fl.
- Microconstituents in Surface Waters from South Florida: Occurrence, Persistence and Relevance with Respect to Water Reuse GEER 2008 – Naples, Fl.
- Regional Distribution of Organic Contaminants in Water and Sediments Everglades National Park. GEER 2008 – Naples, Fl.
- Multivariate Analysis of Selected Microconstituents in Coastal Environments of Southeast Florida. 29th SETAC Annual Meeting - Austin, Texas

Relevant Work Experience

- Principal / Founder – ChemQuants, LLC. May 2020 - Current
- Technical Director/Petroleum Forensics – Pace Analytical Energy Services – Formerly Zymax Forensics - July 2015-June 2020
- Managing Scientist – Infinity Solutions Group - June 2014-February 2018
- Senior Project Scientist/Applied Chemistry & Data Sciences - Cardno - January 2012-November 2017
- Senior Project Scientist – Entrix - January 2011-January 2012
- Project Manager – Southeast Environmental Research Center - June 2010-January 2011
- Senior Chemist - TDI Brooks International - August 2004 – July 2006

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Terraphase Engineering, Inc.

ATTN: Michael McDonald

Project#: 0290

Project name: Former PES Refinery

Laboratory#: L2271579, 2300359, 2307344

Interpreter

July 3, 2023

Michael McDonald
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1100 E. Hector St.
Conshohocken, PA 19428

CQ Project: #0290
Project Name: Former PES Refinery, Philadelphia, PA

Introduction

I am the principal at ChemQuants, LLC, an environmental forensics firm in Santa Barbara, California. I received a bachelor's degree in Chemistry, a second bachelor's degree in Environmental Science, and a Master's in Analytical Chemistry from Florida International University. My professional experience has focused on oil spill environmental forensics. My specialties include petroleum release investigations on coastal waterways, subsurface environments at petroleum terminals and fueling stations, and "big environmental data" chemometrics and data visualization. Besides being chair at a scientific conference, I have authored numerous publications and presentations to my peers.

ChemQuants, LLC. was hired by Terraphase Engineering, Inc. to review the chemistry data reports in the tables below. I was asked to provide expert opinions regarding environmental forensics concerning twelve product samples. The samples that were investigated are in the table below.

Analytical Chemistry

The samples were analyzed at Alpha Analytical, Inc. (Mansfield, MA). The tables contain sample ID information, Laboratory ID information, ChemQuants project ID, sample matrix, and chemical methods[1].

Alpha Analytical

1) *Saturated Hydrocarbons by GC/FID / EPA 8015D*
2) *Alkylated PAHs & Petroleum Biomarkers w/ Full Scan TICs by GC/MS / EPA 8270D-SIM(M)*
3) *C5-C12 PIANO w/ Oxygenates and additives quantification and fingerprinting by GC/MS / EPA 8260B (Mod.)*
4) *Organic Lead by GC/MS / EPA 8270D-SIM*
5) *Density (subcontracted)*

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: Introduction to Environmental Forensics, 2nd Ed., B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.

Product Samples

Client ID	Lab ID	Lab	CQ Project	Matrix	Organic Lead Isomers	8015D GC/FID	VOC PIANO GC/MS	Alkylated PAHs & Biomarkers GC/MS
TG02-MW03-221220	L2271579-01	Alpha	0290	Product	X	X	X	X
TG02-MW04-221220	L2271579-02	Alpha	0290	Product	X	X	X	X
TG02-MW05-221220	L2271579-03	Alpha	0290	Product	X	X	X	X
TG02-MW06-221220	L2271579-04	Alpha	0290	Product	X	X	X	X
TG02-MW08-221220	L2271579-05	Alpha	0290	Product	X	X	X	X
TG02-MW09-221220	L2271579-06	Alpha	0290	Product	X	X	X	X
TG02-MW10-221220	L2271579-07	Alpha	0290	Product	X	X	X	X
TG02-MW11-221219	L2271579-08	Alpha	0290	Product	X	X	X	X
TG02-MW12-221220	L2271579-09	Alpha	0290	Product	X	X	X	X
TG02-MW15-221220	L2271579-10	Alpha	0290	Product	X	X	X	X
TG07-MW6-230104	L2300359-01	Alpha	0290	Product	X	X	X	X
TG07-MW7-230209	L2307344-01	Alpha	0290	Product	X	X	X	X

Investigative methodology

This report dealt with the analysis of twelve LPH samples. Fingerprinting methods characterized the LPH. The forensics quality chemical data employed data analysis techniques typically used in a subsurface gasoline forensics investigation. Weathering of the refined parent gasoline was assessed with petroleum geochemistry molecular ratios[2]. The petroleum refinery process and properties lines of evidence were applied and based on well-established process forensics insights. These insights included historical knowledge of refiners' hydrocarbon feedstock properties, types, and blending strategies[3].

The scope of this investigation includes petroleum type classifications, probable petroleum source origins, and possible time of release examinations wherever possible with the finished gasoline and middle distillate range petroleum signatures. The project context involved ten product samples from Tank Group 02 and two from Tank Group 7. The chemical distributions of VOC and SVOC petroleum signatures were presented in the Fingerprint Mosaics (figures 7 to 34). The sample's general geospatial attributes are exhibited in Figures 1 and 2. The map in

[2] Peters, K. E., C. C. Walters, and J. M. Moldowan. The biomarker guide: Volume 2, Biomarkers and isotopes in petroleum systems and earth history. Cambridge University Press, 2007.
[3] Stout, Scott A., Gregory S. Douglas, and Alen D. Uhler. "Automotive gasoline." Environmental Forensics Contaminant Specific Guide (2006): 465-531.

Figure 2 was coded with a color scheme corresponding to the diagnostic chemistry illustrations in Figures 4 to 6. The 12 LPHs exhibited complex mixtures of petroleum and pyrogenic residues. The mixture proportions of the dominant petroleum and pyrogenic aspects were estimated numerically and presented as a grouped bar graph in Figure 3 and a scatter plot in Figure 4. Note: Two LPHs collected from Tank Group 7 were examined separately from the ten LPH samples collected from Tank Group 2 at the end of the report. Also, environmental forensics characterization and age constraining of the refined gasoline relied on the presence/absence and assemblages of oxygenate additives, organic lead additives, and organic sulfur species.

Fingerprint Mosaics

Fingerprint Mosaics™ exhibited critical fingerprint features of the samples and served as technical references for sample-by-sample evaluations and review of diagnostic ratios (figures 7-34). Fingerprint Mosaics contain essential chemical information extracted from the analytical chemistry reports employed for this investigation and historical documents. Fingerprint Mosaics consist of the following elements:

- Color annotated bar graphs of VOC PIANO data. The bar graph contains a color key describing the chemical classes in the data (figures 7-9).
- Color annotated bar graphs of SVOC saturated hydrocarbon data. The bar graphs contain color keys describing the chemical classes in the data (figures 10-12).
- Color annotated bar graphs of SVOC parent and alkylated PAH, SPAH, and Petroleum Biomarker data. The bar graphs contain color keys describing the chemical classes in the data (figures 13-18 PAH; figures 19-21 Biomarkers).
- Chemical chromatograms from GC/FID method (figures 22-25).
- Extracted Ion Chromatography Profiles ("EICPs") from the SVOC analysis representing diagnostic ion scan fingerprints for n-paraffins (85 m/z) (figures 26-28).
- Extracted Ion Chromatography Profiles ("EICPs") from the SVOC analysis representing diagnostic ion scan fingerprints for different light distillate range biomarker classes – Alkylcyclohexanes (83 m/z) (figures 29-31); Bicyclanes (123 m/z) (figures 32-34).

Results and Discussion

Characteristics and Proportions of Petroleum Mixtures

5-part mixtures of petroleum products and pyrogenic residues with varying proportions are noted in all ten project LPHs collected from TG-02: a) An alkylate refinery intermediate type signature ~C5-C8 boiling range, b) a finished gasoline signature, d) a naphtha-like to light distillate range petroleum signature ("NLD") ~ C9-C16 boiling range, e) middle distillate range signature ~C13-C22 boiling range, and a pyrogenic residue from a manufactured gas plant ("MGP") process.

An approximate summary of the compositional petroleum attributes is shown in Tables 3 and 4, the grouped bar graphs in Figure 3, and an SVOC range-focused scatter plot in Figure 4. Figure 3 provides a general perspective on the dominant petroleum source aspects of the LPHs. In

contrast, Figure 4 approximately differentiates the LPHs that exhibited NLD prominence from LPHs where NLD signatures were likely mixed with low-level middle distillate range ("low-MDR") petroleum.

Alkylate Signature

The chemical distributions of the alkylate aspects in the LPHs are presented in the VOC PIANO bar graphs in Figures 7 to 9, described by the orange bar series. As shown in the grouped bar graph in Figure 7, the alkylate-type product is significantly enriched relative to other VOC range products in TG02-MW-05-221219 and TG02-MW-04-221219, TG02-MW-06-221219 and TG02-MW-10-221219. The dominant alkylate quality in TG02-MW-05-221219 indicates the occurrence of alkylate refinery intermediate product in the subsurface environment of the NE zone of TG02. On the other hand, alkylate is present at proportionately lower enrichment levels in the rest of the LPHs collected from TG02.

Given the identification of the alkylate intermediate product in TG02-MW-05-221219, it was reasonable to have concluded that LPHs collected from the NE zone vicinity of TG02 likely contained a mixture of pure intermediate alkylate and alkylate enrichments from finished gasoline. Alkylate abundance in LPHs was characterized by diagnostic ratio #3 in Tables 1 and 2, and ratios #4 indicate that the character of alkylate in the TG02 LPHs was likely manufactured with a sulfuric acid H_2SO_4 catalyzed alkylation unit[4]. Proportional attributes of alkylate in LPHs from TG-02 (relative to other dominant source aspects) were presented as bar graphs in Figure 3.

Finished Gasoline Signature

Finished gasoline was the most ubiquitous and relatively abundant petroleum in LPHs collected from TG02. The relative enrichment qualities of finished gasoline in LPHs from TG02 were evident in Figure 3. Finished gasoline-enrichment factors in the LPHs were also apparent in GC/FID chromatograms in Figures 8 to 11. In the GC/FID chromatograms, the LPHs most enriched with finished gasoline exhibited chemical prominence on the left side of the chromatograms with lesser expressions of the unresolved complex mixture ("UCM") extended from the tail end of the gasoline signatures (Figure 22 to 25). Correspondingly, the predominance of gasoline in the LPHs was signaled by the relative enrichments of nC8 paraffin "octane" (85 m/z) in Figures 26 to 28, the lightest SVOC range alkylcyclohexane ("CH-2") (83 m/z) in figures 29 to 31, and lightest pairs of bicyclane isomers (Left side) (123 m/z) in figures 32 to 34.

From a compositional standpoint, the finished gasoline signature was presented in the VOC PIANO bar graphs. The VOC bar graphs exhibited the relative proportions of nC5 to nC9 isoparaffins (red bars), C3-C4 monoaromatics (green bars), naphthenes (purple bars), n-paraffins (blue bars), minor features of olefins (light blue bars), and C2 monoaromatics ("BTEX") (black bars). Multiple lines of evidence showed that finished gasoline was the most enriched (relative to other products) in TG02-MW-03-221219, TG02-MW-08-221219, TG02-MW-09-221219, TG02-MW-10-221220, TG02-MW-11-221220, TG02-MW-12-221220, and TG02-MW-15-221220. From a geospatial standpoint, gasoline prominence was exhibited in LPHs collected from the central section of the eastern zone of TG02 (figure 2). An age-constraining discussion for the gasoline expressed in LPHs from TG-02 will be discussed later in this report.

[4] *Beall, Philip W., et al. "On the role of process forensics in the characterization of fugitive gasoline." Environmental Claims Journal 14.4 (2002): 487-505.*

Naphtha-like to Light Distillate Range Petroleum Signature ("NLD")

Multiple visualization tools were applied to show changes in NLD enrichments relative to other petroleum types expressed in LPHs from TG-02. The NLD was the second most dominant petroleum type expressed in LPHs from TG-02 (figure 3). Although less abundant than finished gasoline in all LPHs from TG-02, properties of NLD were evident in LPHs that exhibited the following chemical attributes: 1) light distillate range UCM (figures 22 to 25), 2) enrichments of ~nC9 to nC16 n-paraffins (figures 26 and 27), 3) enrichments of CH-2 to CH-7 alkylcyclohexanes (figures 29 and 30), 4) and predominance of iso-paraffins IS1380 and IS1470, relative to isoprenoids pristane and phytane (figures 10 and 11). These hydrocarbon signatures were most consistent with a Jet fuel of some type. The complex mixture of petroleum in the LPHs (and the limited sample size) confounded a confident identification of the likely Jet Fuels: Jet A, JP-5, JP-4, or JP-8.

One metric applied to assess the proportions of NLD to other petroleum products was displayed in Figure 3. It was presented in the grouped bar graph in Figure 3 that NLD was the dominant SVOC range product in LPHs from TG02-MW-08-221220 and TG02-MW-10-221220. The presentation of NLD in Figure 3 was based on a compound most susceptible to biodegradation in the SVOC range of petroleum - nC12, and consequently, unable to detect the NLD when severely biodegraded and depleted of n-paraffins. A second metric was based on fairly recalcitrant SVOC range hydrocarbons, i.e., isoparaffins and isoprenoids. The second metric was applied to assess the proportions of NLD relative to low-MDR – since low-MDR signatures were evident in two LPHs - TG02-MW-05-221220 and TG02-MW-10-221220 (figure 4). Results from this metric were presented in Figure 4 and showed that NLD was the most enriched SVOC range petroleum feature in TG02-MW-08-221220 and TG02-MW-06-221220.

In Figure 4, it was shown that two samples - TG02-MW-05-221220 and TG02-MW-10-221220 – registered the lowest expressions of NLD relative to the low-MDR signature. It is important to note that TG02-MW-05-221220 and TG02-MW-10-221220 were not dominated by middle distillate range chemistry, but instead, the two LPHs exhibited the least enrichments of NLD relative to low-MDR. Explicitly stated, in two LPHs - TG02-MW-05-221220 and TG02-MW-10-221220 - the SVOC range showed the lowest NLD relative to low-MDR (figure 4). On the "flip-side," the VOC range of hydrocarbons of NLD was "unmasked" in the LPHs that exhibited the lowest relative enrichments of refined gasoline - TG02-MW-06-221220. The VOC range of NLD in TG02-MW-06-221220 was expressed if the VOC PIANO bar graphs as enrichments of naphthenes cyclohexane ("MCYP"), methylcyclohexane ("MCYHX"), and nC9 to nC15 n-paraffins, relative to other VOC hydrocarbons from the refined gasoline mixture (figure 7).

Low-MDR

As described in the section above, two LPHs - TG02-MW-05-221220 and TG02-MW-10-221220 - clearly exhibited low-MDR. Characteristic features of low-MDR were the following: a) bimodal UCM distribution (figures 22 and 24), b) lower ratio values of IS1380 and IS1470 to phytane – expressed in Figures 4, 26, and 27, and c) middle distillate range bicyclane signature 123 m/z (figures 32 and 33).

MGP Pyrogenic Residue

Pyrogenicity means being derived from a carbonization or combustion process. The following chemical attributes indicate pyrogenicity in the sample: a) enrichments of 5-6 ringed PAHs – illustrated as teal blue bars in the PAH bar graphs (figure 13); b) Greater enrichments of non-alkylated parent PAHs relative to the higher alkylated isomer series (more notable in four ring PAHs like fluoranthene, pyrenes). Parent PAHs are denoted with a "0" following the analyte

abbreviation in the figure label; conversely, alkylated PAHs are indicated with a # > 0 following the analyte abbreviation in the figure label (figure 13). Manufactured gas plant (MGP) processes are myriad[5]. The feedstock used for gas production is one of the main variables that impact the tar byproduct's chemical fingerprint. The feedstock used at an MGP plant varies from coal to oil-based. Oil-based feedstocks range from Naphtha to middle distillate gas oil to crude oil, and trace levels of the hydrocarbon feedstock used during gas production are often present at low tar byproduct levels[6]. A PAH fingerprint diagnostic for MGP residue is notable in TG02-MW-04-221220 (figure 13). In addition, a low-level MGP pyrogenic residue was evident at relatively deficient levels in TG02-MW-03-221220, TG02-MW-05-221220, TG02-MW-06-221220, TG02-MW-08-221220, TG02-MW-09-221220, TG02-MW-10-221220, TG02-MW-11-221220, TG02-MW-12-221220, TG02-MW-15-221220 (figure 13 to 17).

Age-Constraining of Gasoline in TG-02

The complex mixture of petroleum in the VOC range (refinery intermediate alkylate) and NLD, which spanned the heavy VOC to lighter SVOC petroleum range, precluded PIANO-based gasoline fingerprint differentiation. Furthermore, the MTBE in TG02-MW-05-221220, TG02-MW-08-221220, TG02-MW-10-221220, and TG02-MW-15-221220 may have been derived from a refinery intermediate source. Thus, MTBE occurrence may not have been applicable for diagnosing the presence of unleaded gasoline in the LPHs from TG-02 (tables 1 and 2).

As described earlier, refined gasoline was the dominant petroleum product in LPHs from TG-02 (figure 3), and significant concentrations and compositional variation of the organic lead antiknock package fingerprints provided strong evidence that a considerable mass of the refined fuel in LPHs from TG-02 was leaded gasoline. Figures 5 and 6 showed the presence of four distinct leaded gasoline attributes in the LPH:

The following leaded parent gasoline attributes were apparent in the plots (the order of leaded gasoline components were approximations).

Leaded Gasoline A: TG02-MW-04-221220, TG02-MW-06-221220 (TEL Dominant >>> RM25 Dominant)

Leaded Gasoline B: TG02-MW-11-221220, TG02-MW-12-221220, and TG02-MW-15-221220 (TEL Dominant > RM25 Dominant)

Leaded Gasoline C: TG02-MW-5-221220, TG02-MW-8-221220, and TG02-MW-9-221220 (TEL Dominant ~= RM25 Dominant)

Leaded Gasoline D: TG02-MW-03-221220 (RM25 Dominant > RM50 Dominant)

Leaded gasoline A group exhibited two concentration regimes: TG02-MW-04-221220 contained 1.13 grams of lead per gallon ("glpg"), and TG02-MW-06-221220 measured 0.31 glpg. All LPHs in groups B through C exhibited organic lead isomer concentrations less than 0.5 glpg. Leaded gasoline D comprised one LPH with total organic lead measured at 1.28 glpg. This information can be applied to approximate a period of release based on federally mandated total lead concentration limits for automobile gasoline[7]. Basing an assumption that the leaded gasoline

[5] Uhler, A. D., and S. D. Emsbo-Mattingly. "Environmental stability of PAH source indices in pyrogenic tars." *Bulletin of environmental contamination and toxicology* 76.4 (2006): 689-696.
[6] Emsbo-Mattingly, Stephen, et al. "Identifying Manufactured Gas Plant Tar in the Environment Using Chemical Fingerprinting." *Environmental Claims Journal* 15.4 (2003): 477-490.
[7] Gibbs, L. M.. How Gasoline Has Changed. SAE Technical Paper Number 932828. (Fuels and Lubricants Meeting

aspects in the subsurface of TG-02 were linked to finished gasoline, an age constraint for the leaded gasoline is approximated as follows:

TG02-MW-04-221220 and TG02-MW-03-221220 were the only LPHs with a total lead concentration of over 1.1 glpg and thus may have been released before 1982. Reacted mixtures ("RM") were used to manufacture gasoline from approximately 1960 to about 1985, and the total lead concentration of RM packages was limited to 0.5 gplg after 1985. Thus, it is logical to conclude that LPHs from TG02-MW-06-221220, TG02-MW-05-221220, TG02-MW-08-221220, TG02-MW-09-221220, TG02-MW-11-221220, TG02-MW-12-221220, TG02-MW-15-221220 were likely released before 1985.

Two LPHs from TG-07

The LPHs from TG-07 were significantly different from each other and from the LPHs collected from TG-02. The VOC range of TG07-MW-06-221220 was enriched considerably in ~nC5 to nC15 n-paraffins. The abundance of n-paraffins, absence of olefins, and sparseness of isoparaffins and monoaromatics, indicate the presence of an ultra-light condensate crude feedstock in the VOC range of TG07-MW-06-221220. The SVOC range of TG07-MW-06-221220 exhibited a pyrogenic signature likely linked to MGP residue (figure 18).

The LPH from TG07-MW-07-221220 exhibited an odd distribution of C3-C4 monoaromatics dominated by the isopropyl benzene ("IPROPB") compound. Furthermore, the distribution of C2-monoaromatics in TG07-MW-07-221220 was not typical for finished gasoline. Although difficult to interpret without additional information, the VOC range signature in TG07-MW-07-221220 may have been linked to the product (maybe associated with waste) of the reformate formulation process (figure 9). The SVOC range aspect of TG07-MW-07-221220 was composed of a severely biodegraded NLD product generally similar to what was observed in the SVOC range of LPHs from TG-02 (figures 12, 18, 25, 28, 31).

Upon receipt of additional information, I reserve the right to modify and supplement my opinions outlined in this report.

You may email questions or concerns to markcejas@chemquants.com
regarding chemistry data or interpretation.

Respectfully submitted,

Mark Jonathan Cejas
Principal

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and Exposition) October, 1993.

ChemQuants project ID	290	290	290	290	290	290
Sample ID	TG02-MW-03-221220	TG02-MW-04-221220	TG02-MW-05-221220	TG02-MW-06-221219	TG02-MW-08-221220	TG02-MW-09-221219
Laboratory ID	L2271579-01	L2271579-02	L2271579-03	L2271579-04	L2271579-05	L2271579-06
Sample Type	OIL	OIL	OIL	OIL	OIL	OIL
Waterwashing						
1) Toluene / (Toluene+Methylcyclohexane)	0.19	0.29	0.12	0.41	0.60	0.79
2) (Benzene+Toluene) / (Ethylbenzene+Xylenes)	0.07	0.33	0.16	0.63	0.31	0.51
Diagnostic Ratios (Refining Properties)						
3) 2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.43	0.56	0.92	0.43	0.49	0.52
4) 2,2,4-Trimethylpentane / Total TMPs	0.42	0.42	0.41	0.43	0.43	0.49
5) nC9 / Isopropylbenzene	4.20	9.53	0.51	12.67	6.95	5.35
6) nC10 / 1-Methyl-2-ethylbenzene	0.83	4.47	0.56	2.83	2.24	0.58
7) nC11 / 1,4-Dimethyl-2-ethylbenzene	1.18	4.05	0.75	3.30	4.21	0.89
8) Naphthalene / (Naphthalene+nC12)	0.57	0.73	0.89	0.29	0.27	0.64
Oxygenates & Other (ug/kg)						
Methyl-tert-butyl ether (MTBE)	U	U	1090000	U	280000	U
Organic Lead Isomers (ug/Kg)						
Tetraethyl Lead	129000	474000	126000	130000	30400	43400
Tetramethyl Lead	10400	U	U	U	1480	1100
Trimethyl Ethyl Lead	47600	U	U	U	3650	2520
Diethyl Dimethyl Lead	141000	U	339	U	12900	12100
Methyl Triethyl Lead	188000	1360	12700	1380	24800	24500
Grams of Lead per Gallon (glpg)	1.28	1.13	0.33	0.31	0.18	0.20
Density (g/ml)	0.82	0.79	0.78	0.79	0.81	0.77
Sulfur Thiophenes (ug/kg)						
2-Methylthiophene	U	U	U	U	U	U
2-Ethylthiophene	U	U	U	U	U	U
Benzothiophene	U	328000	U	U	U	U
Fraction of Pyrogenic PAHs						
9) (FL + Py) / (C2 + C3 + C4 P/As)	NR	11.76	NR	NR	NR	NR
Pyrogenic & Petrogenic Ratios						
10) C2 DBT / (C2 DBT + C2 P/A)	0.33	0.30	0.45	0.34	0.37	0.36
11) C2 N / (C2 N + C2 P/A)	0.93	0.90	0.91	0.92	0.96	0.94
Saturated HC Biodegredation ratio						
12) n-C17 / Pristane	0.13	0.63	NR	0.29	0.44	0.60
13) n-C18 / Phytane	0.33	1.13	0.04	0.45	0.78	0.96
Saturated HC Diagnostic ratios						
14) Pristane / Phytane	2.34	2.36	1.86	2.17	2.84	2.02
15) Norpristane / Pristane	0.58	0.61	0.53	0.65	0.56	0.53
16) IS1470 / Norpristane	2.28	1.40	1.35	1.81	2.42	1.57
17) IS1380 / Phytane	2.84	1.36	1.15	2.01	3.24	1.31
18) IS1470 / Phytane	3.08	2.00	1.33	2.53	3.82	1.67

Table 1. Table of diagnostic chemical properties.

ChemQuants project ID	290	290	290	290	290	290
Sample ID	TG02-MW-10-221220	TG02-MW-11-221219	TG02-MW-12-221220	TG02-MW-15-221220	TG07-MW-06-230104	TG07-MW-07-230209
Laboratory ID	L2271579-07	L2271579-08	L2271579-09	L2271579-10	L2300359-01	L2307344-01
Sample Type	OIL	OIL	OIL	OIL	OIL	OIL
Waterwashing						
1) Toluene / (Toluene+Methylcyclohexane)	0.70	0.83	0.79	0.76	0.08	NR
2) (Benzene+Toluene) / (Ethylbenzene+Xylenes)	0.60	0.58	0.48	0.46	0.36	1.68
Diagnostic Ratios (Refining Properties)						
3) 2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.51	0.38	0.56	0.51	NR	NR
4) 2,2,4-Trimethylpentane / Total TMPs	0.40	0.46	0.47	0.47	NR	NR
5) nC9 / Isopropylbenzene	3.40	4.84	4.92	4.95	156.39	NR
6) nC10 / 1-Methyl-2-ethylbenzene	0.84	0.54	0.67	0.68	106.13	1.15
7) nC11 / 1,4-Dimethyl-2-ethylbenzene	1.11	0.76	1.29	1.09	199.44	0.79
8) Naphthalene / (Naphthalene+nC12)	0.65	0.67	0.53	0.57	NR	0.54
Oxygenates & Other (ug/kg)						
Methyl-tert-butyl ether (MTBE)	109000	U	U	362000	U	U
Organic Lead Isomers (ug/Kg)						
Tetraethyl Lead	-	44600	48100	58300	U	1040
Tetramethyl Lead	-	U	621	2690	U	U
Trimethyl Ethyl Lead	-	U	1360	5890	U	U
Diethyl Dimethyl Lead	-	760	5660	21500	U	U
Methyl Triethyl Lead	-	5570	12800	36900	U	U
Grams of Lead per Gallon (glpg)	-	0.12	0.16	0.30	0.00	0.003
Density (g/ml)	-	0.77	0.79	0.80	0.86	0.82
Sulfur Thiophenes (ug/kg)						
2-Methylthiophene	U	U	U	U	U	1660000
2-Ethylthiophene	U	U	U	U	U	4850000
Benzothiophene	U	U	U	U	U	U
Fraction of Pyrogenic PAHs						
9) (FL + Py) / (C2 + C3 + C4 P/As)	0.96	NR	NR	NR	11.40	2.39
Pyrogenic & Petrogenic Ratios						
10) C2 DBT / (C2 DBT + C2 P/A)	0.39	0.34	0.41	0.40	0.42	0.51
11) C2 N / (C2 N + C2 P/A)	0.94	0.97	0.93	0.93	0.87	0.90
Saturated HC Biodegredation ratio						
12) n-C17 / Pristane	0.12	0.43	0.59	0.58	NR	0.03
13) n-C18 / Phytane	0.21	0.83	0.83	0.92	NR	NR
Saturated HC Diagnostic ratios						
14) Pristane / Phytane	2.50	2.02	1.82	2.03	1.84	2.70
15) Norpristane / Pristane	0.58	0.51	0.54	0.55	0.35	0.48
16) IS1470 / Norpristane	0.92	1.95	1.65	1.68	1.63	1.63
17) IS1380 / Phytane	1.08	1.50	1.17	1.35		
18) IS1470 / Phytane	1.34	1.99	1.63	1.88		

Table 2. Table of diagnostic chemical properties.

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www.ChemQuants.com

ChemQuants project ID	290	290	290	290	290
Sample ID	TG02-MW-03-221220	TG02-MW-04-221220	TG02-MW-05-221219	TG02-MW-06-221220	TG02-MW-08-221220
Laboratory ID	L2271579-01	L2271579-02	L2271579-03	L2271579-04	L2271579-05
Sample Type	OIL	OIL	OIL	OIL	OIL
% ~Composition Ratios (Alkylate vs. Gasoline, Naphtha to Light Distillate Range, Middle Distillate, & Pyrogenic Residue) [224TMP / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	11.7	36.7	82.1	26.3	16.9
% ~Composition Ratios (Gasoline vs. Alkylate, Naphtha to Light Distillate Range, Middle Distillate, & Pyrogenic Residue) [124TMB / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	63.12	24.71	9.78	24.43	40.74
% ~Composition Ratios (Naphtha to Light Distillate Range vs. Alkylate, Gasoline, Middle Distillate, & Pyrogenic Residue) [nC12 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	9.5	8.6	0.4	13.8	24.8
% ~Composition Ratios (Middle Distillate Range vs. Alkylate, Gasoline, Naphtha to Light Distillate Range & Pyrogenic Residue) [DBT2 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	0.3	0.4	0.3	0.3	0.2
% ~Composition Ratios (Pyrogenic Residue vs. Alkylate, Gasoline, Naphtha to Light Distillate Range & Middle Distillate Range) [FL0 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	0.0	1.2	0.0	0.0	0.0

Note: If field is "NR" a ratio was not calculable.
If field is -- hydrocarbons occurred at trace levels
If field is "NA" a ratio was not analyzed.

Table 3. Table of % composition of petroleum products in the LPH samples.

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Santa Barbara, CA 93101
www.ChemQuants.com

Interpreter

ChemQuants project ID	290	290	290	290	290
Sample ID	TG02-MW-09-221220	TG02-MW-10-221219	TG02-MW-11-221220	TG02-MW-12-221220	TG02-MW-15-221220
Laboratory ID	L2271579-06	L2271579-07	L2271579-08	L2271579-09	L2271579-10
Sample Type	OIL	OIL	OIL	OIL	OIL
% ~Composition Ratios (Alkylate vs. Gasoline, Naphtha to Light Distillate Range, Middle Distillate, & Pyrogenic Residue) [224TMP / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	23.7	27.3	14.4	24.7	21.9
% ~Composition Ratios (Gasoline vs. Alkylate, Naphtha to Light Distillate Range, Middle Distillate, & Pyrogenic Residue) [124TMB / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	49.39	33.84	57.69	47.92	49.21
% ~Composition Ratios (Naphtha to Light Distillate Range vs. Alkylate, Gasoline, Middle Distillate, & Pyrogenic Residue) [nC12 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	4.9	11.5	4.3	7.3	7.3
% ~Composition Ratios (Middle Distillate Range vs. Alkylate, Gasoline, Naphtha to Light Distillate Range & Pyrogenic Residue) [DBT2 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	0.1	0.6	0.0	0.2	0.2
% ~Composition Ratios (Pyrogenic Residue vs. Alkylate, Gasoline, Naphtha to Light Distillate Range & Middle Distillate Range) [FL0 / (224TMP+124TMB +nC12+DBT2+FL0)] x 100	0.0	0.1	0.0	0.0	0.0

Note: If field is "NR" a ratio was not calculable.
If field is -- hydrocarbons occurred at trace levels
If field is "NA" a ratio was not analyzed.

Table 4. Table of % composition of petroleum products in the LPH samples.

ChemQuants, LLC
Santa Barbara, CA 93101
www.ChemQuants.com

Interpreter

Abbreviation	VOC Compound	Abbreviation	VOC Compound	Abbreviation	VOC Compound
3M1B	3-Methyl-1-butene	ECYP	Ethylcyclopentane	IBCYHX	Isobutylcyclohexane
ISOP	Isopentane	223TMP	2,2,3-Trimethylpentane	1M2EB	1-Methyl-2-Ethylbenzene
1P	1-Pentene	234TMP	2,3,4-Trimethylpentane	C10	Decane (C10)
2M1B	2-Methyl-1-Butene	233TMP	2,3,3-Trimethylpentane	TBUTB	tert-Butylbenzene
C5	Pentane	23DMHX	2,3-Dimethylhexane	124TMB	1,2,4-Trimethylbenzene
T2P	trans-2-Pentene	2MHP	2-Methylheptane	IBUTB	Isobutylbenzene
IPE	Isoprene	4MHP	4-Methylheptane	SBUB	sec-Butylbenzene
C2P	cis-2-Pentene	3MHP	3-Methylheptane	1M3IPROPB	1-Methyl-3-Isopropylbenzene
TBA	Tertiary Butanol	3EHX	3-Ethylhexane	1M4IPROPB	1-Methyl-4-Isopropylbenzene
22DMB	2,2-Dimethylbutane	T	Toluene	123TMB	1,2,3-Trimethylbenzene
4M1P	4-Methyl-1-pentene	2MTHIO	2-Methylthiophene	1M2IPROPB	1-Methyl-2-Isopropylbenzene
CYP	Cyclopentane	T14DMCYHX	1,4-Dimethylcyclohexane (trans)	IA	Indane
23DMB	2,3-Dimethylbutane	3MTHIO	3-Methylthiophene	13DEB	1,3-Diethylbenzene
2MP	2-Methylpentane	1O	1-Octene	1M3PROPB	1-Methyl-3-N-Propylbenzene
MTBE	Methyl tert butyl ether	C8	Octane	IE	Indene
3MP	3-Methylpentane	T12DMCYHX	1,2-Dimethylcyclohexane (trans)	1M4PROPB	1-Methyl-4-N-Propylbenzene
1H	1-Hexene	EDB	1,2-Dibromoethane	NBUB	n-Butylbenzene
C6	n-Hexane	C2O	cis-2-Octene	12DM4EB	1,2-Dimethyl-4-Ethylbenzene
IPROE	Isopropyl Ether	IPCYP	Isopropylcyclopentane	12DEB	1,2-Diethylbenzene
T2H	trans-2-Hexene	12DMCYHX	1,2-Dimethylcyclohexane (cis)	1M2PROPB	1-Methyl-2-N-Propylbenzene
2M2P	2-Methyl-2-pentene	25DMHP	2,5-Dimethylheptane	14DM2EB	1,4-Dimethyl-2-Ethylbenzene
C2H	cis-2-Hexene	35DMHP	3,5-Dimethylheptane	C11	Undecane
ETBE	Ethyl-Tert-Butyl-Ether	33DMHP	3,3-Dimethylheptane	13DM4EB	1,3-Dimethyl-4-Ethylbenzene
22DMP	2,2-Dimethylpentane	114TMCYHX	1,1,4-Trimethylcyclohexane	13DM5EB	1,3-Dimethyl-5-Ethylbenzene
MCYP	Methylcyclopentane	23DMHP	2,3-Dimethylheptane	13DM2EB	1,3-Dimethyl-2-Ethylbenzene
24DMP	2,4-Dimethylpentane	34DMHP	3,4-Dimethylheptane	12DM3EB	1,2-Dimethyl-3-Ethylbenzene
223TMP	2,2,3-Trimethylbutane	4MO	4-Methyloctane	1245TMB	1,2,4,5-Tetramethylbenzene
EDC	1,2-Dichloroethane	2MO	2-Methyloctane	1235TMB	1,2,3,5-Tetramethylbenzene
33DMP	3,3-Dimethylpentane	EB	Ethylbenzene	NPYB	N-Pentylbenzene
CYHX	Cyclohexane	2ETHIO	2-Ethylthiophene	1234TMB	1,2,3,4-Tetramethylbenzene
2MHX	2-Methylhexane	3MO	3-Methyloctane	13DM5TBUB	1,3-Dimethyl-5-tert-Butylbenzene
B	Benzene	33DEP	3,3-Diethylpentane	C12	Dodecane (C12)
23DMP	2,3-Dimethylpentane	PMX	p/m-Xylene	135TEB	1,3,5-Triethylbenzene
THIO	Thiophene	1N	1-Nonene	N	Naphthalene
11DMCYP	1,1-Dimethylcyclopentane	T3N	trans-3-Nonene	BTHIO	Benzothiophene
3MHX	3-Methylhexane	C3NE	cis-3-Nonene	124TEB	1,2,4-Triethylbenzene
TAME	Tertiary-Amyl Methyl Ether	C9	Nonane (C9)	HYB	Hexylbenzene
C13DMCYP	1,3-Dimethylcyclopentane (cis)	STRE	Styrene	MMT	MMT
3EP	3-Ethylpentane	OX	o-Xylene	C13	Tridecane
T13DMCYP/2M1HX	1,3-DMCP (trans)/2-Methyl-1-hexene	2N	2-Nonene	2MN	2-Methylnaphthalene
1HP/T12DMCYP	1-Heptene/1,2-DMCP (trans)	IPROCYHX	Isopropylcyclohexane	1MN	1-Methylnaphthalene
224TMP	Isooctane	IPROPB	Isopropylbenzene	C14	Tetradecane (C14)
T3H	trans-3-Heptene	33DMO	3,3-Dimethyloctane	C15	Pentadecane
C7	Heptane	NPRPPB	n-Propylbenzene		
T2H	trans-2-Heptene	2MNON	2-Methylnonane		
C2H	cis-2-Heptene	3MNON	3-Methylnonane		
22DMHX	2,2-Dimethylhexane	1M3EB	1-Methyl-3-Ethylbenzene		
MCYHX	Methylcyclohexane	1M4EB	1-Methyl-4-Ethylbenzene		
25DMHX	2,5-Dimethylhexane	135TMB	1,3,5-Trimethylbenzene		
24DMHX	2,4-Dimethylhexane	1D	1-Decene		

Table 5. Table of VOC compounds and abbreviations.

ChemQuants, LLC
Santa Barbara, CA 93101
www.ChemQuants.com

Interpreter

Abbreviation	VOC Compound	Abbreviation	VOC Compound
D0	cis/trans-Decalin	NBT1	C1-Naphthobenzothiophenes
D1	C1-Decalins	NBT2	C2-Naphthobenzothiophenes
D2	C2-Decalins	NBT3	C3-Naphthobenzothiophenes
D3	C3-Decalins	NBT4	C4-Naphthobenzothiophenes
D4	C4-Decalins	BA0	Benz(a)anthracene
N0	Naphthalene	C0	Chrysene/Triphenylene
N1	C1-Naphthalenes	BC1	C1-Chrysenes
N2	C2-Naphthalenes	BC2	C2-Chrysenes BS
N3	C3-Naphthalenes	BC3	C3-Chrysenes
N4	C4-Naphthalenes	BC4	C4-Chrysenes
BT0	Benzothiophene	BBF	Benzo(b)fluoranthene
BT1	C1-Benzo(b)thiophenes	BJKF	Benzo(j)+(k)fluoranthene
BT2	C2-Benzo(b)thiophenes	BAF	Benzo(a)fluoranthene
BT3	C3-Benzo(b)thiophenes	BEP	Benzo(e)pyrene
BT4	C4-Benzo(b)thiophenes	BAP	Benzo(a)pyrene
B	Biphenyl	PER	Perylene
DF	Dibenzofuran	IND	Indeno(1,2,3-cd)pyrene
ACY	Acenaphthylene	DA	Dibenz(a,h)+(a,c)anthracene
ACE	Acenaphthene	GHI	Benzo(g,h,i)perylene
F0	Fluorene	2MN	2-Methylnaphthalene
F1	C1-Fluorenes	1MN	1-Methylnaphthalene
F2	C2-Fluorenes	26DMN	2,6-Dimethylnaphthalene
F3	C3-Fluorenes	235TMN	2,3,5-Trimethylnaphthalene
DBT0	Dibenzothiophene	4MDT	4-Methyldibenzothiophene(4MDT)
DBT1	C1-Dibenzothiophenes BS	2MDT	2/3-Methyldibenzothiophene(2MDT)
DBT2	C2-Dibenzothiophenes	1MDT	1-Methyldibenzothiophene(1MDT)
DBT3	C3-Dibenzothiophenes	3MP	3-Methylphenanthrene (3MP)
DBT4	C4-Dibenzothiophenes	2MP	2-Methylphenanthrene (2MP)
P0	Phenanthrene	2MA	2-Methylanthracene (2MA)
P1	C1-Phenanthrenes/Anthracenes	9MP	9/4-Methylphenanthrene (9MP)
P2	C2-Phenanthrenes/Anthr BS	1MP	1-Methylphenanthrene (1MP)
P3	C3-Phenanthrenes/Anthracenes	BbFl	Benzo(b)fluorene
P4	C4-Phenanthrenes/Anthracenes	BcFl	7H-Benzo(c)fluorene
A0	Anthracene	2MPy	2-Methylpyrene
CAR	Carbazole	4MPy	4-Methylpyrene
FL0	Fluoranthene	1MPy	1-Methylpyrene
PY0	Pyrene	R	Retene
FP1	C1-Fluoranthenes/Pyrenes		
FP2	C2-Fluoranthenes/Pyrenes		
FP3	C3-Fluoranthenes/Pyrenes		
FP4	C4-Fluoranthenes/Pyrenes		
NBT0	Naphthobenzothiophenes		

Table 6. Table of SVOC compounds and abbreviations.

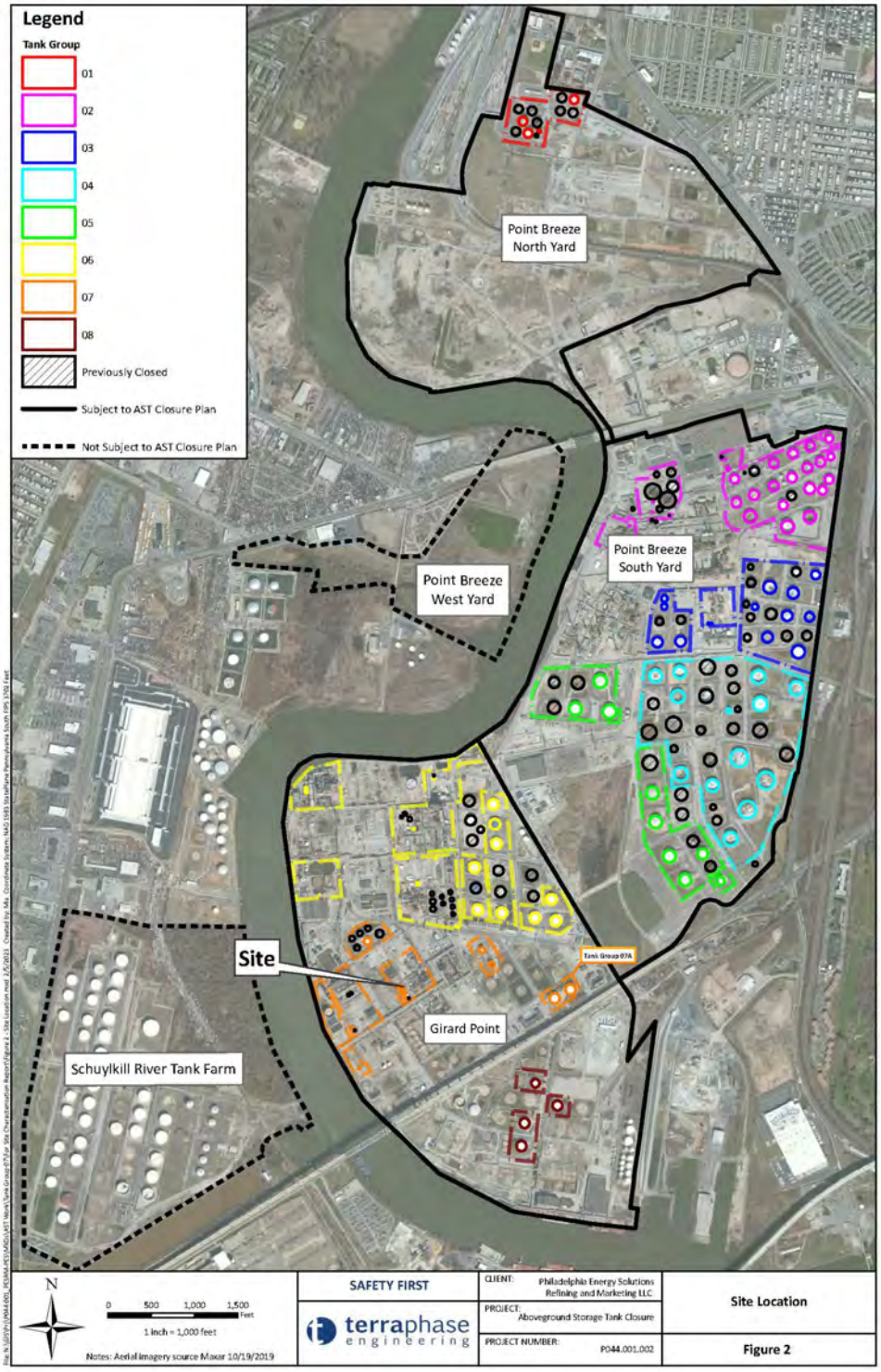

Figure 1. Geospatial Map of Tank Group Regions.

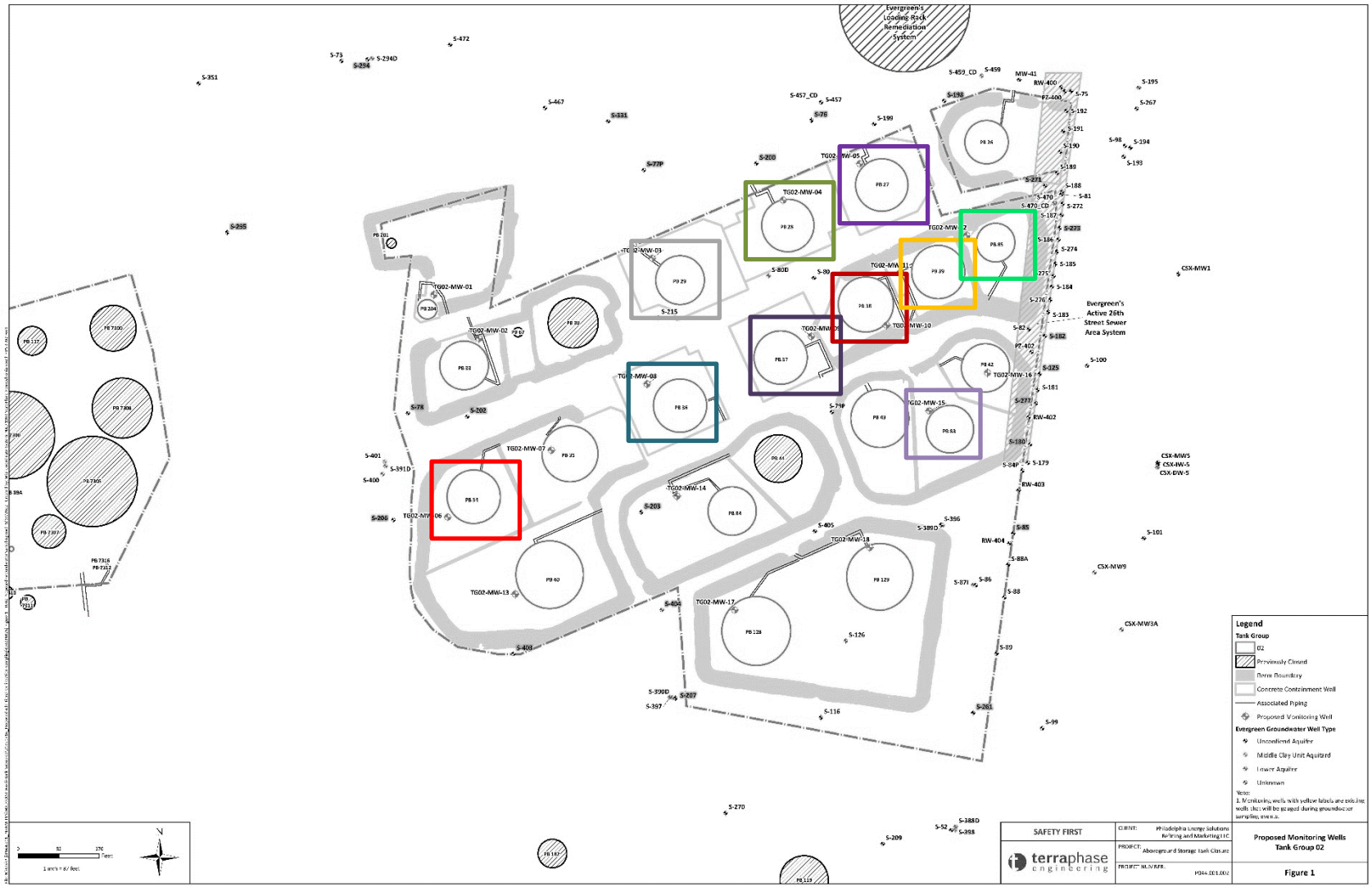

Figure 2. Geospatial Map of Tank Group 2 (Wells are color-coded to correspond to figures 5 to 7).

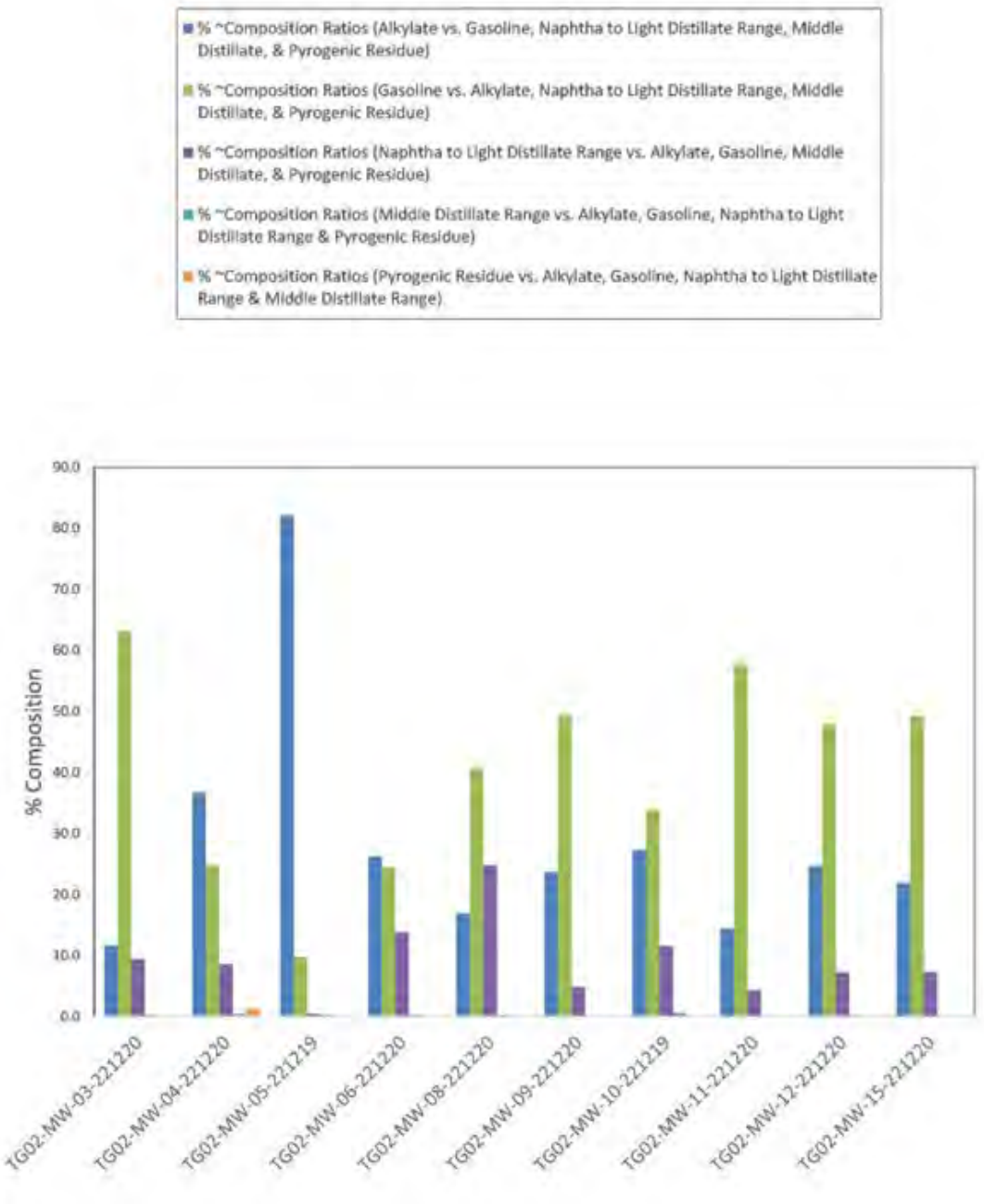

Figure 3. Grouped bar graph of approximate % compositions of petroleum products and pyrogenic residue.

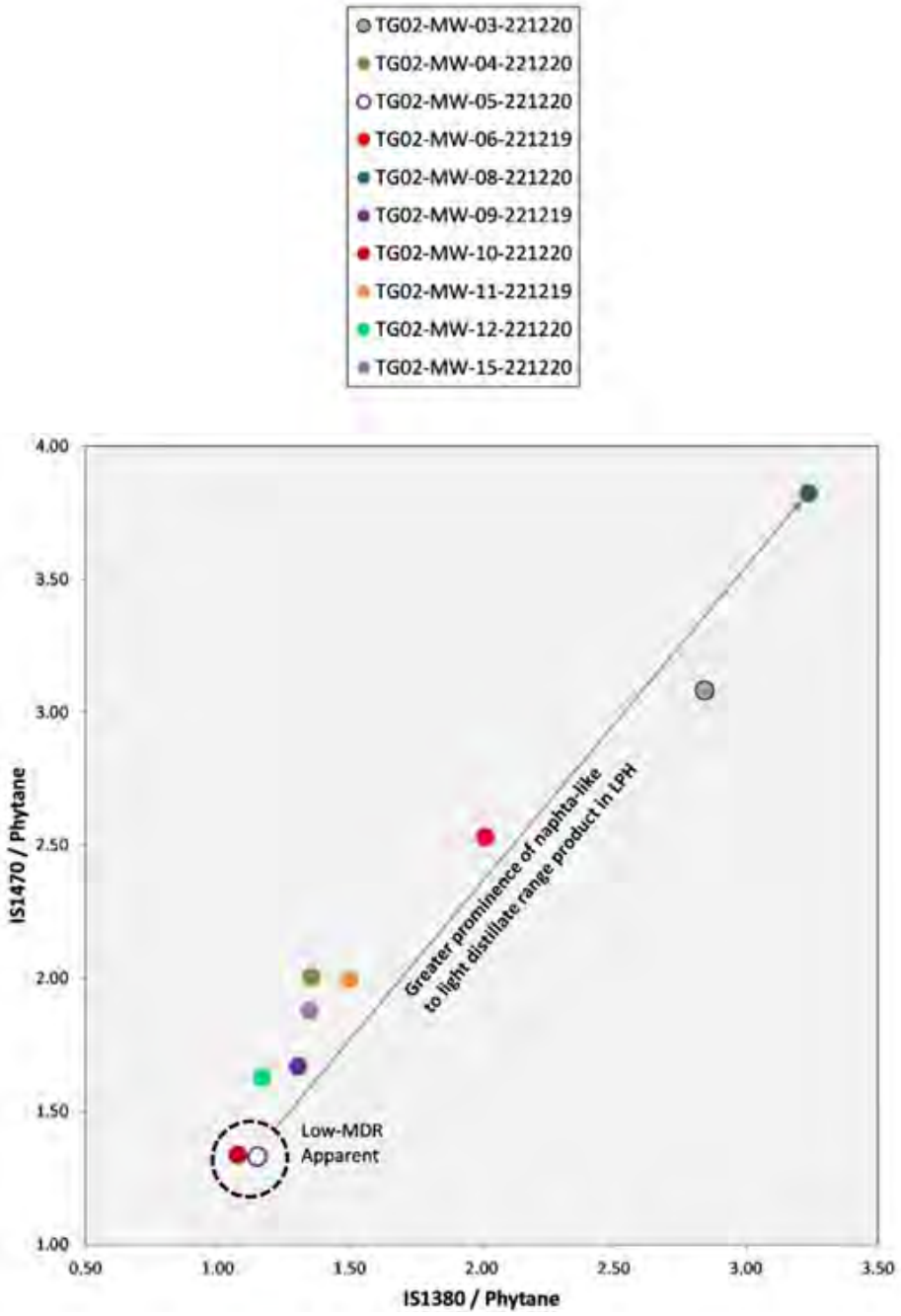

Figure 4. Scatter plot of isoprenoids ratios exhibiting approximate representation of naphtha-like to light distillate range petroleum dominance, relative to apparent middle distillate range background in TG-02.

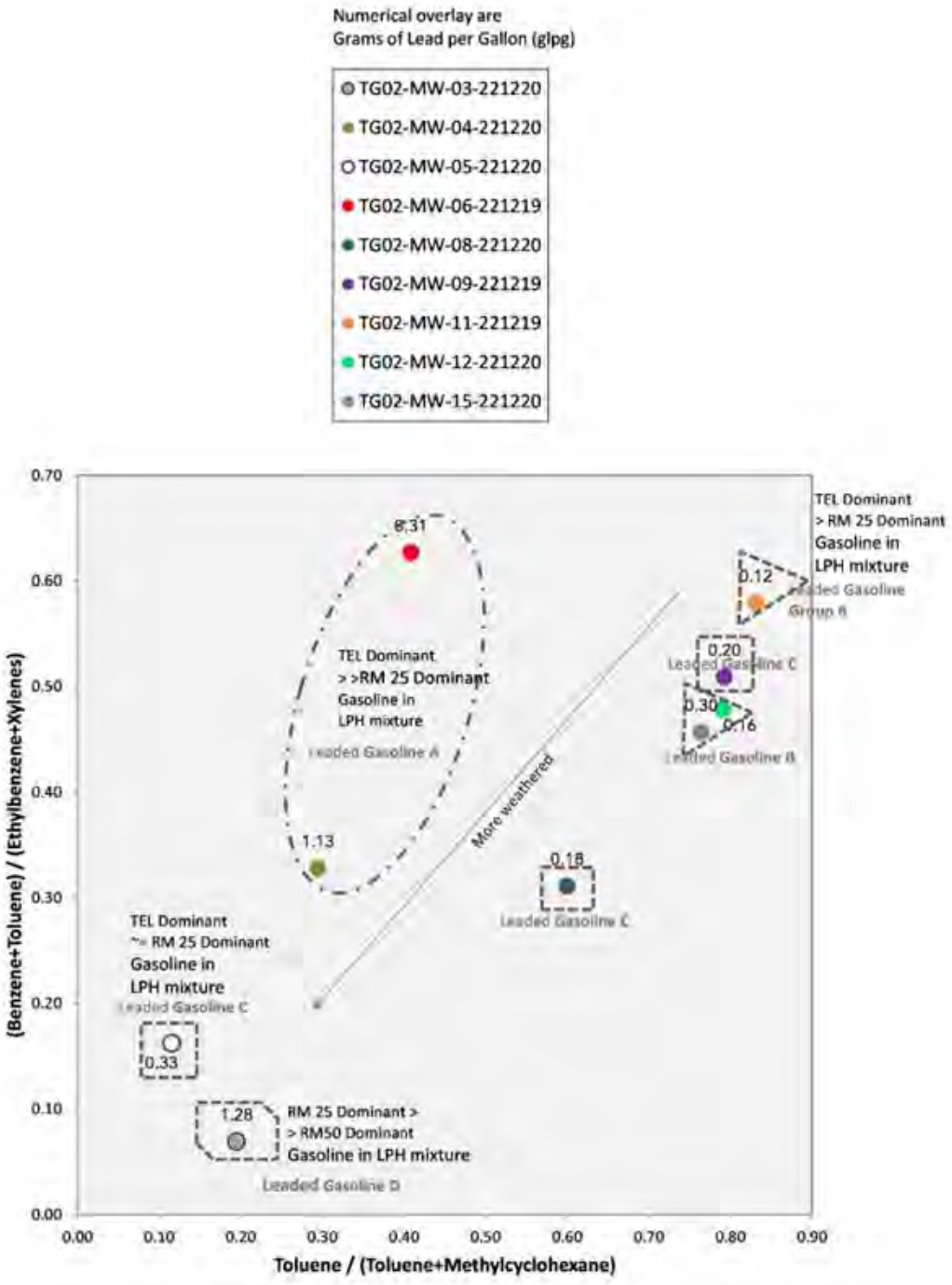

Figure 5. Scatter plot of gasoline C2 monoaromatics ratios overlaid with organic lead gasoline attributes.

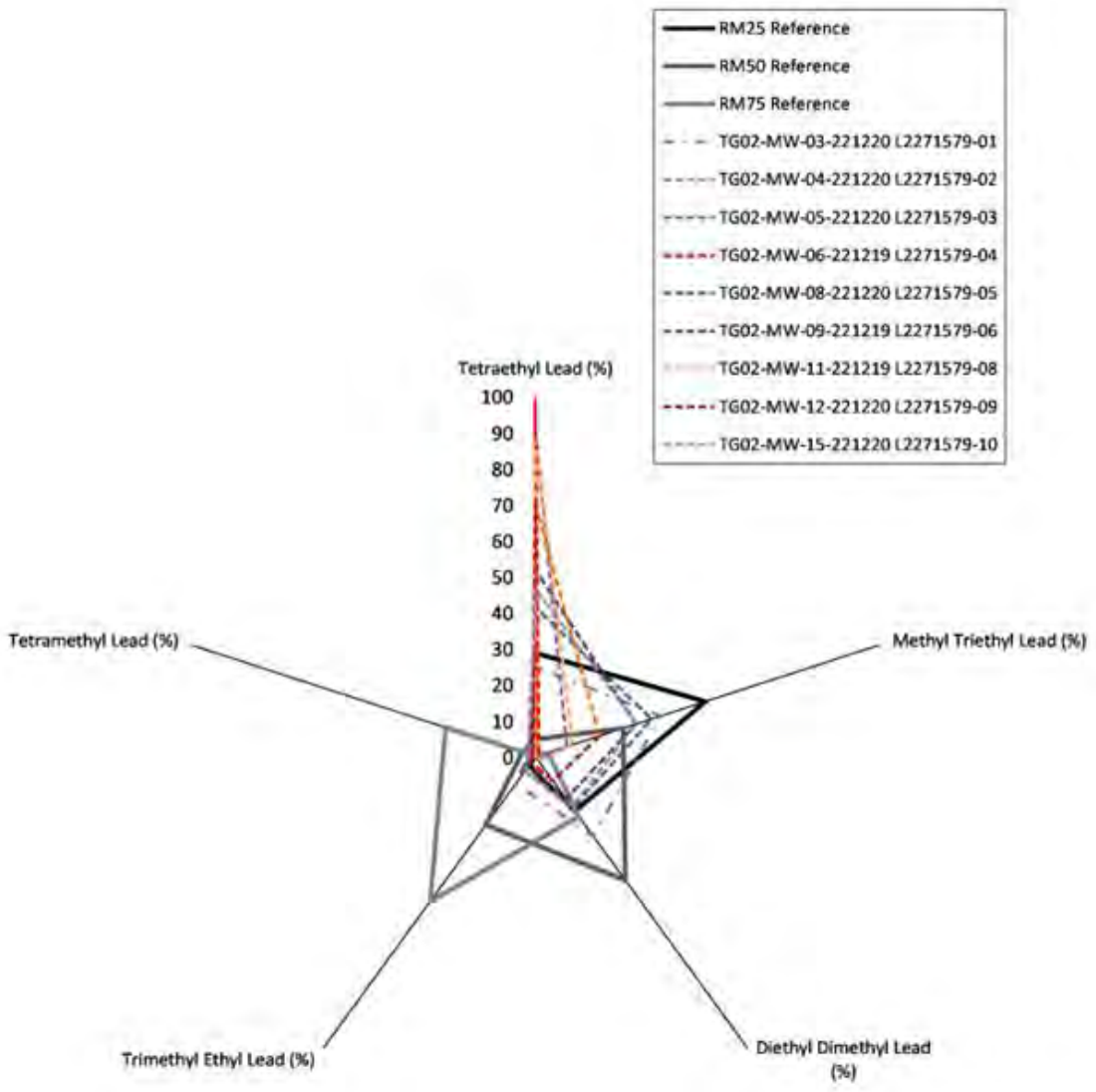

Figure 6. Star plot of organic lead isomer distributions.

VOC PIANO Bar Graphs

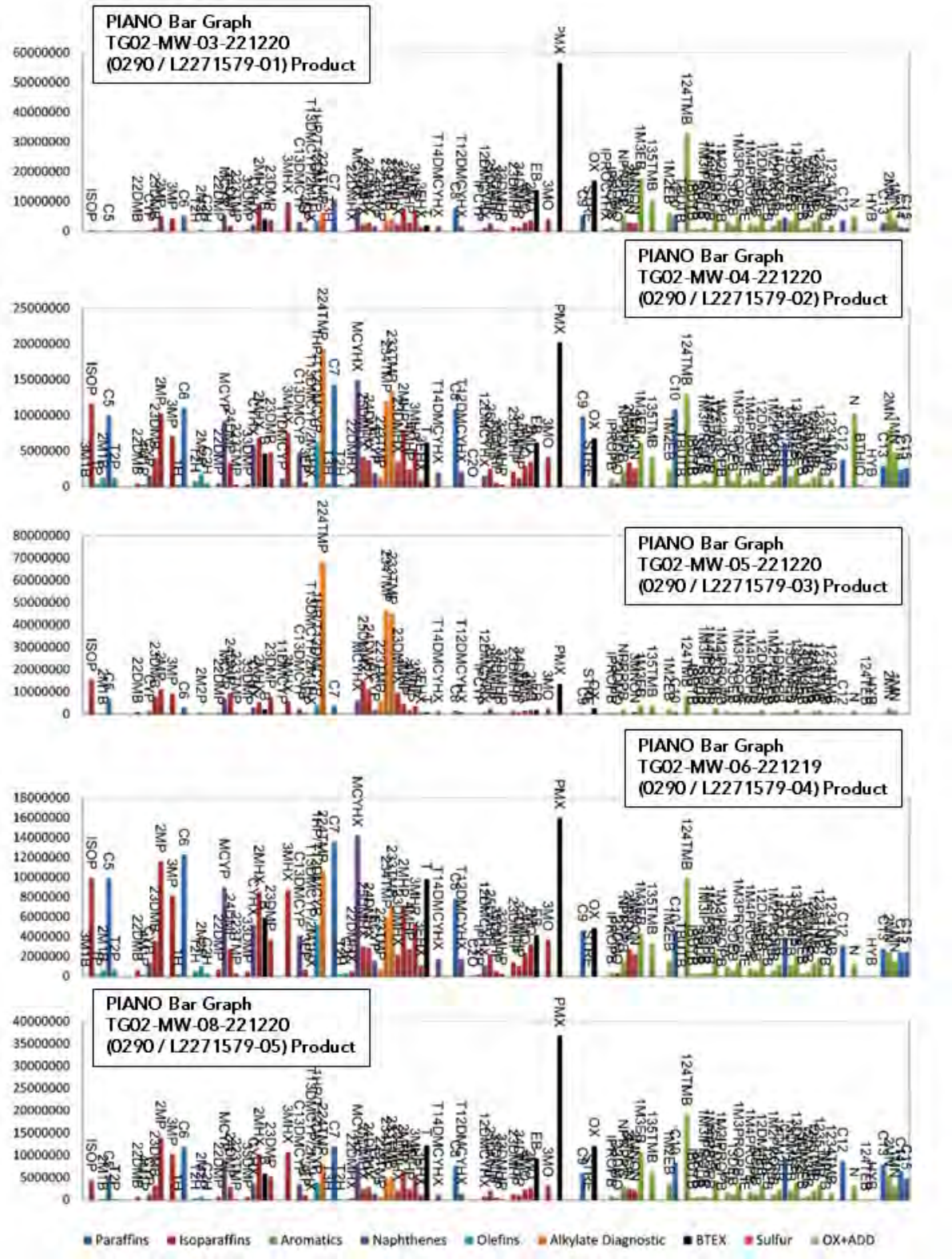

Figure 7. Fingerprint Mosaics™ for product samples – VOC PIANO Bar Graphs.

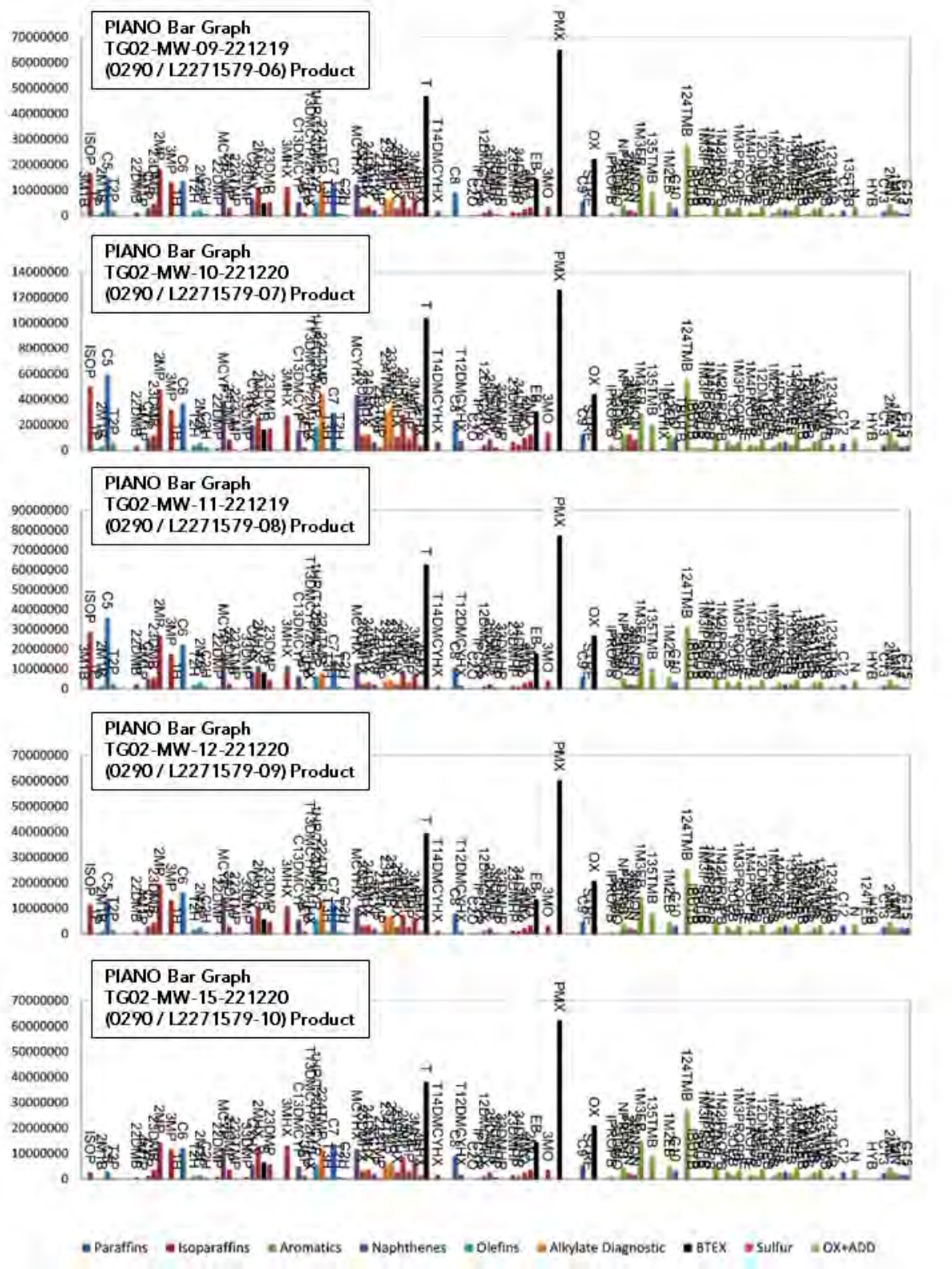

Figure 8. Fingerprint Mosaics™ for product samples – VOC PIANO Bar Graphs.

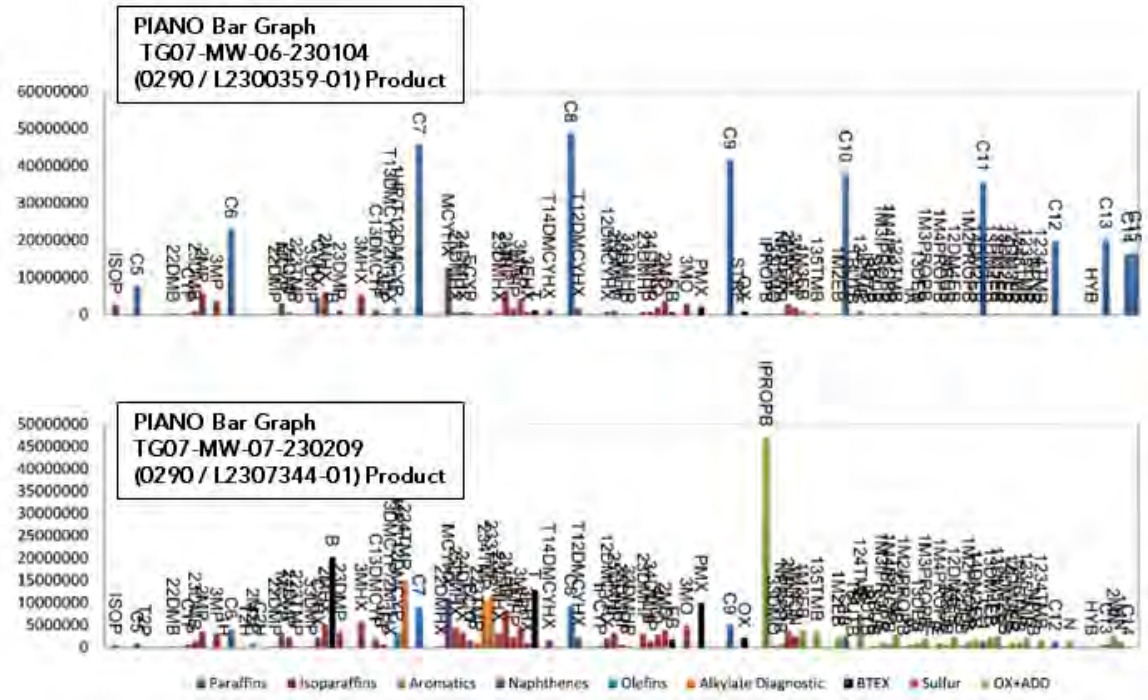

Figure 9. Fingerprint Mosaics™ for product samples – VOC PIANO Bar Graphs.

SHC SVOC Bar Graphs

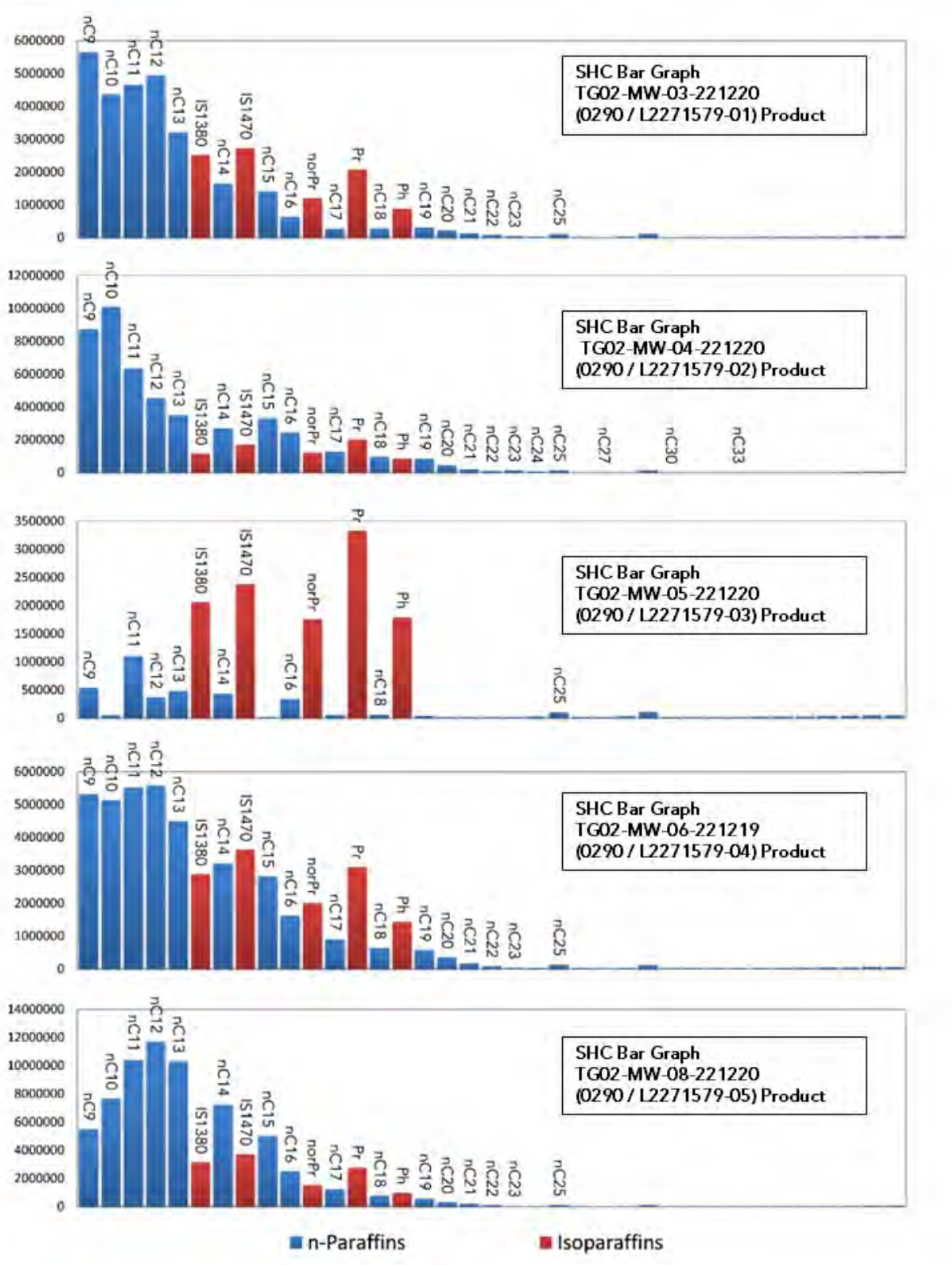

Figure 10. Fingerprint Mosaics™ for product samples – Saturated Hydrocarbons (SHC) Bar Graphs.

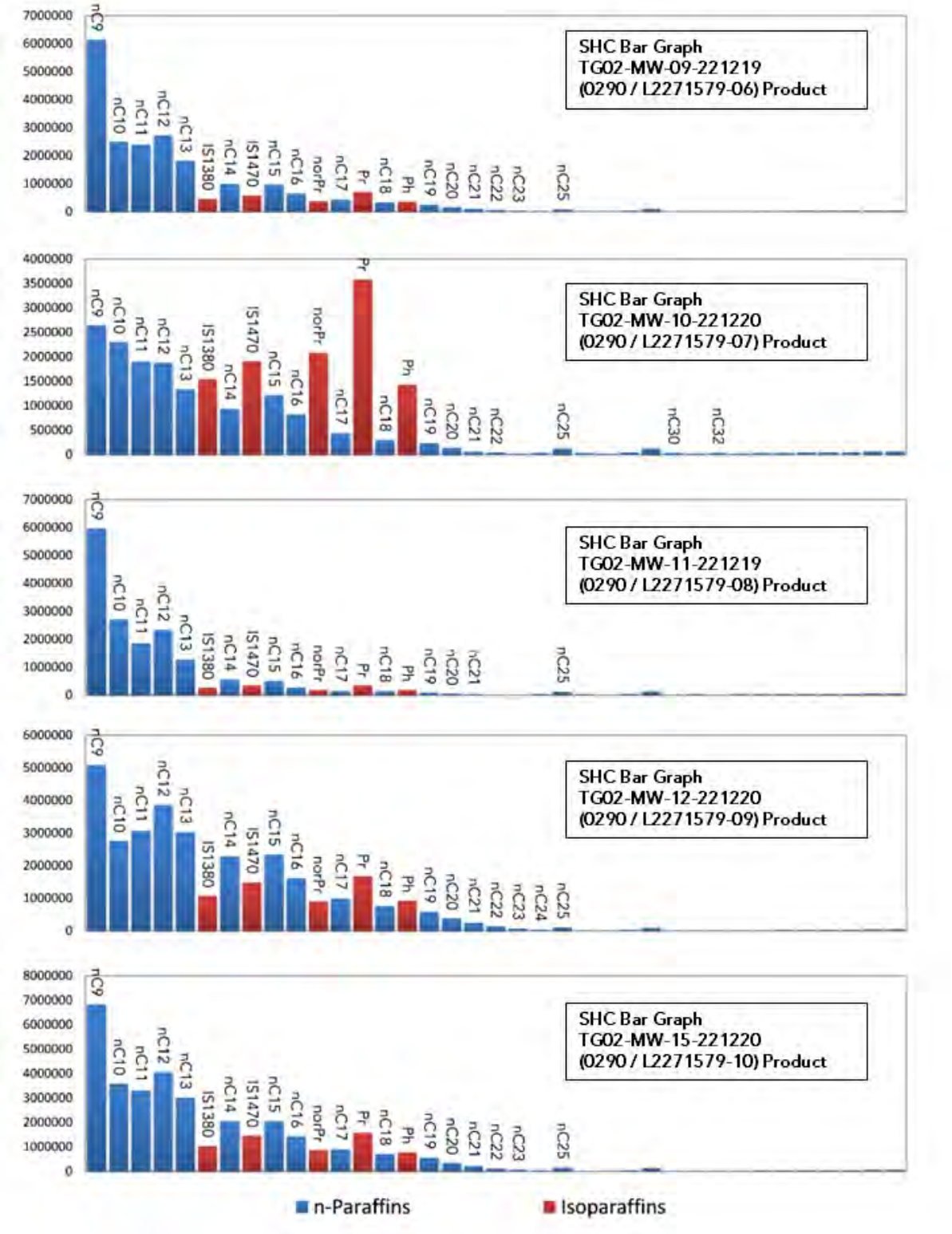

Figure 11. Fingerprint Mosaics™ for product samples – Saturated Hydrocarbons (SHC) Bar Graphs.

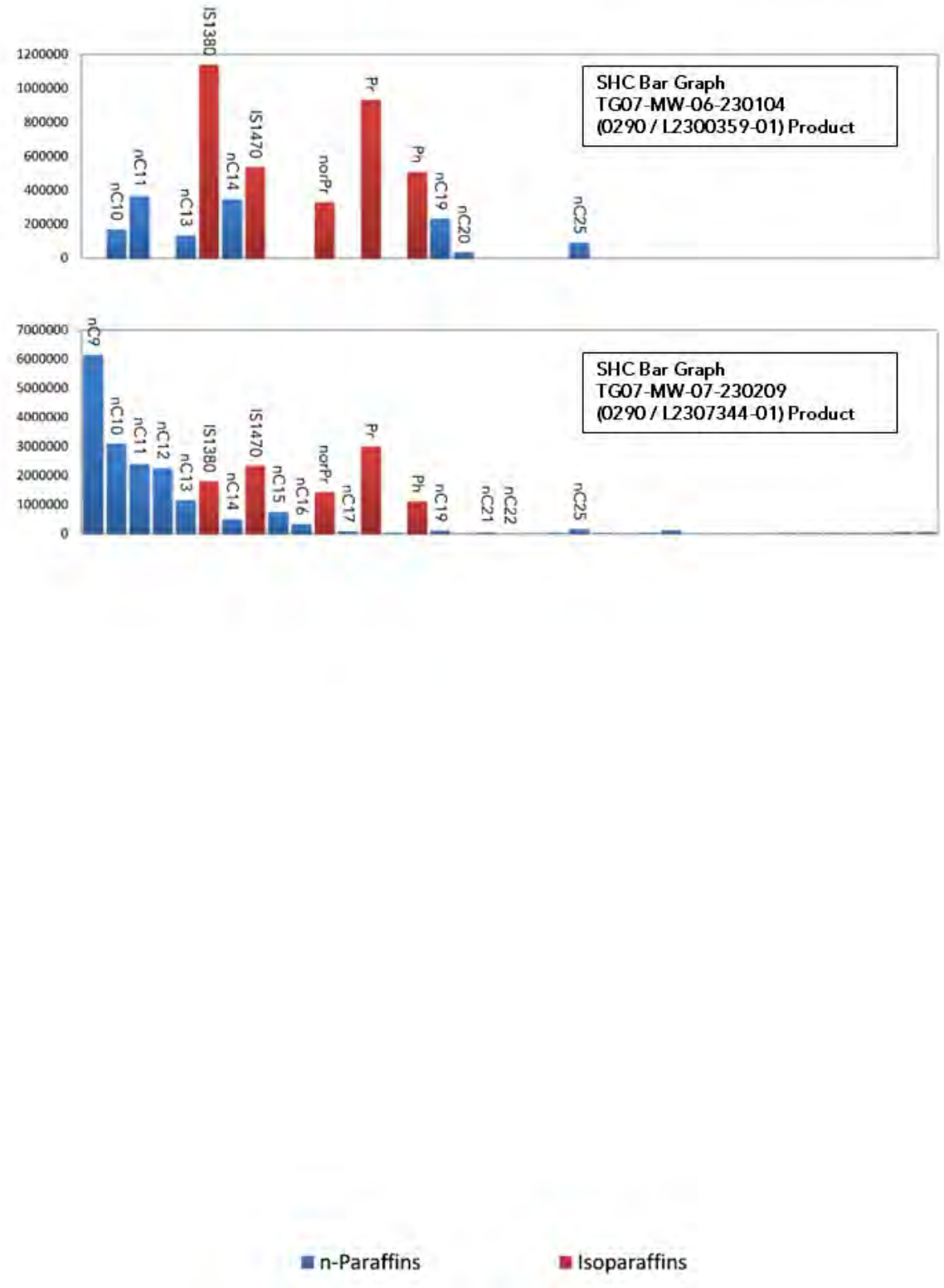

Figure 12. Fingerprint Mosaics™ for product samples – Saturated Hydrocarbons (SHC) Bar Graphs.

Parent and Alkylated PAH Bar Graphs

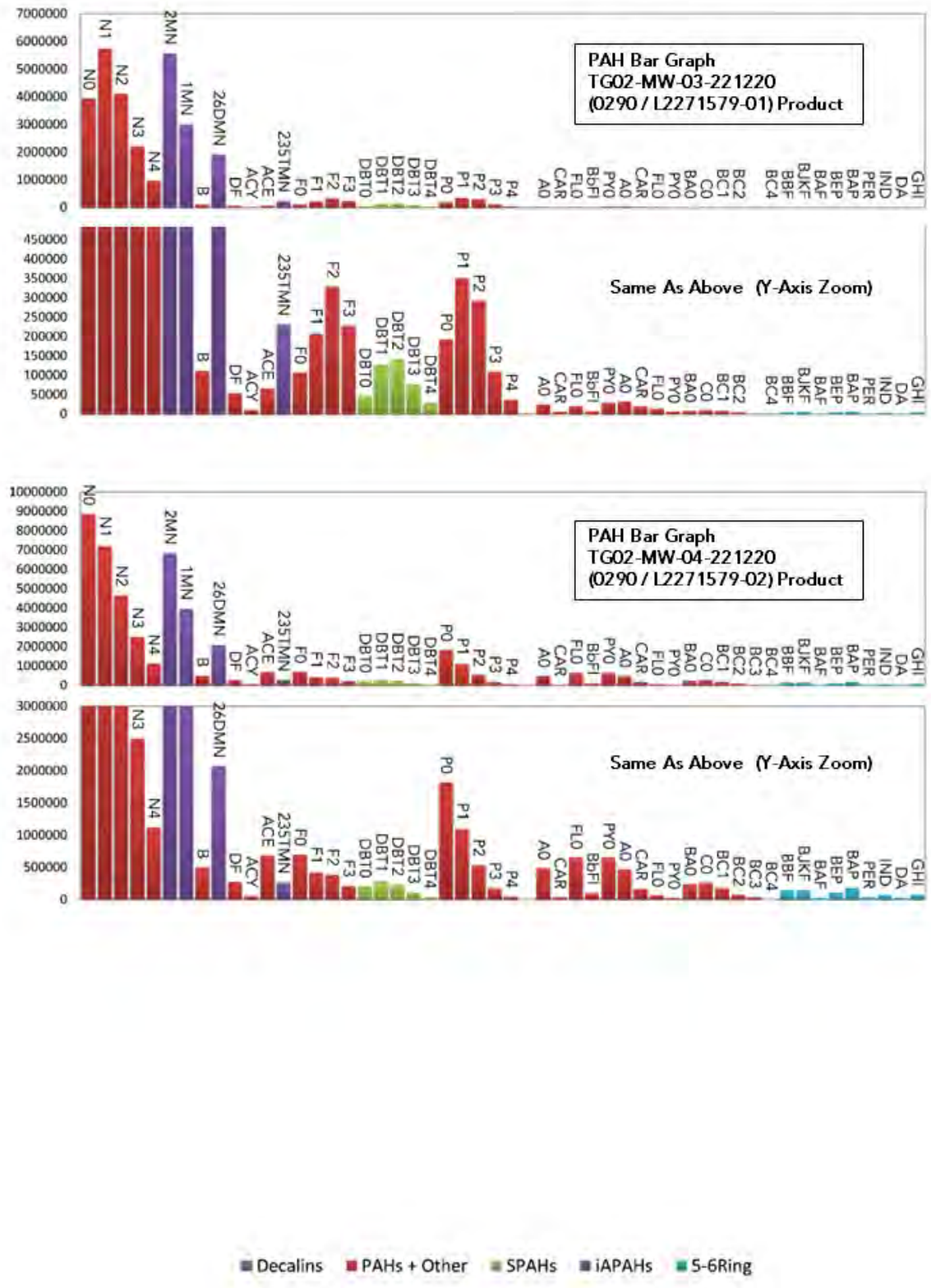

Figure 13. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

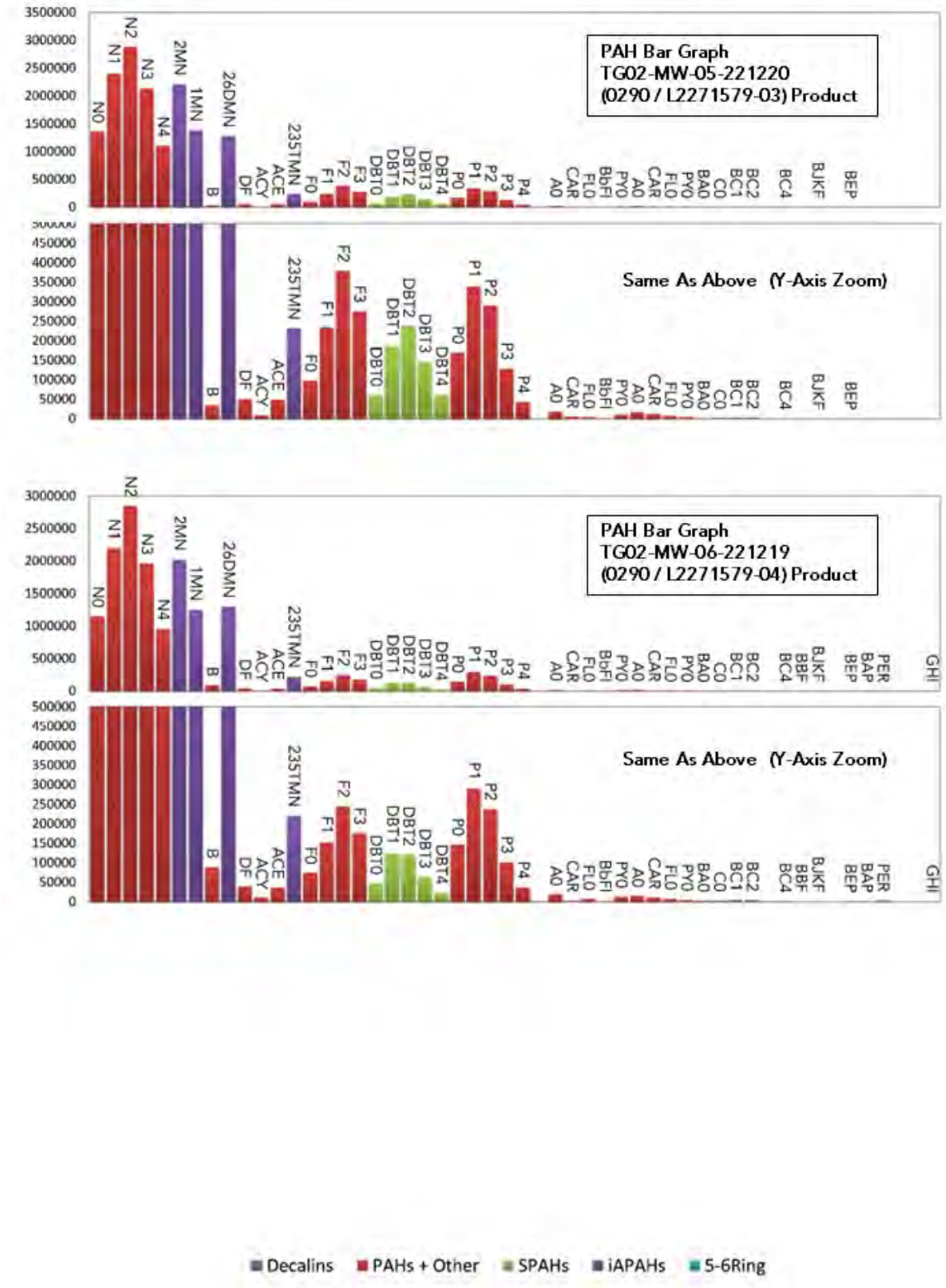

Figure 14. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

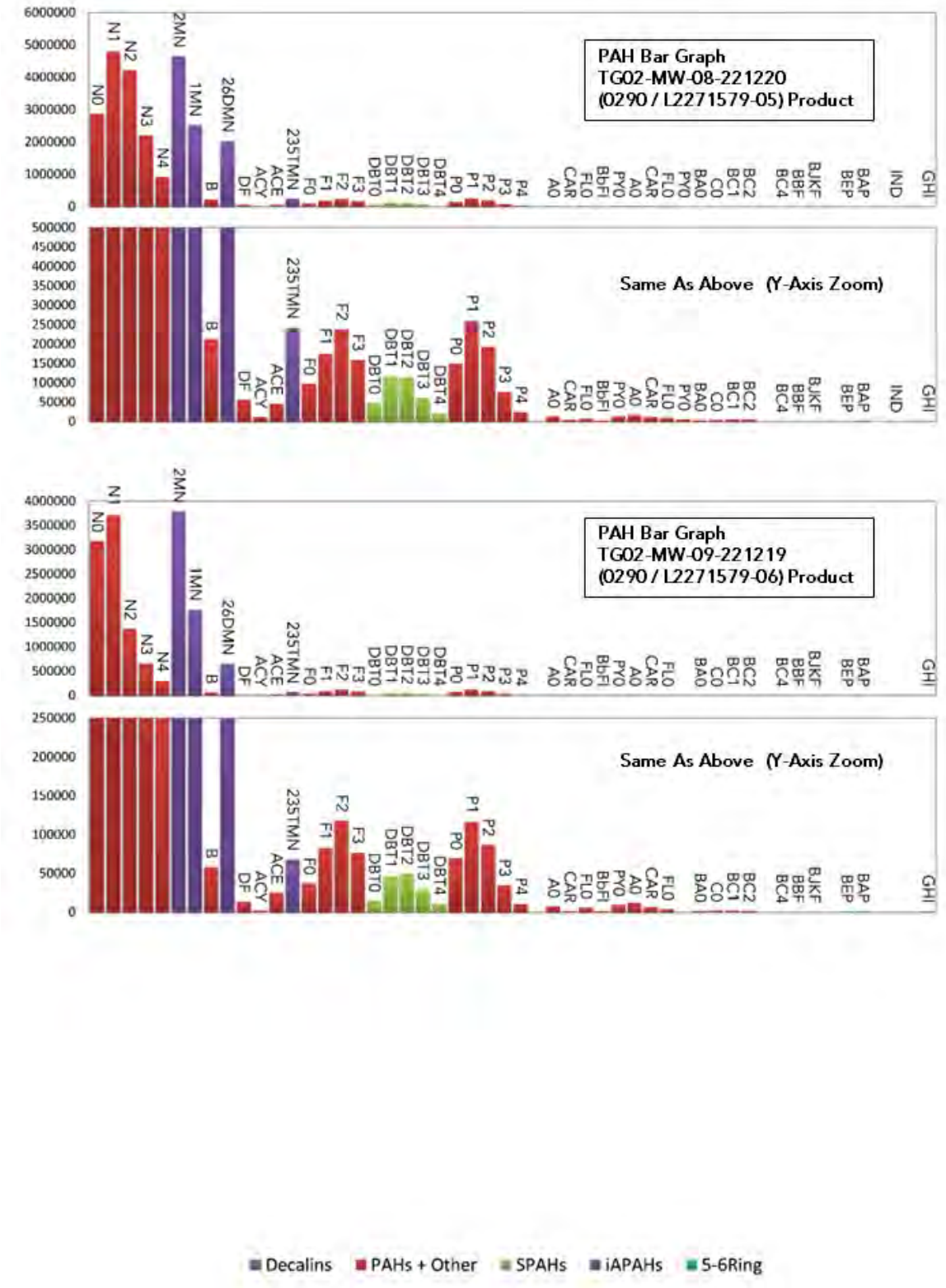

Figure 15. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

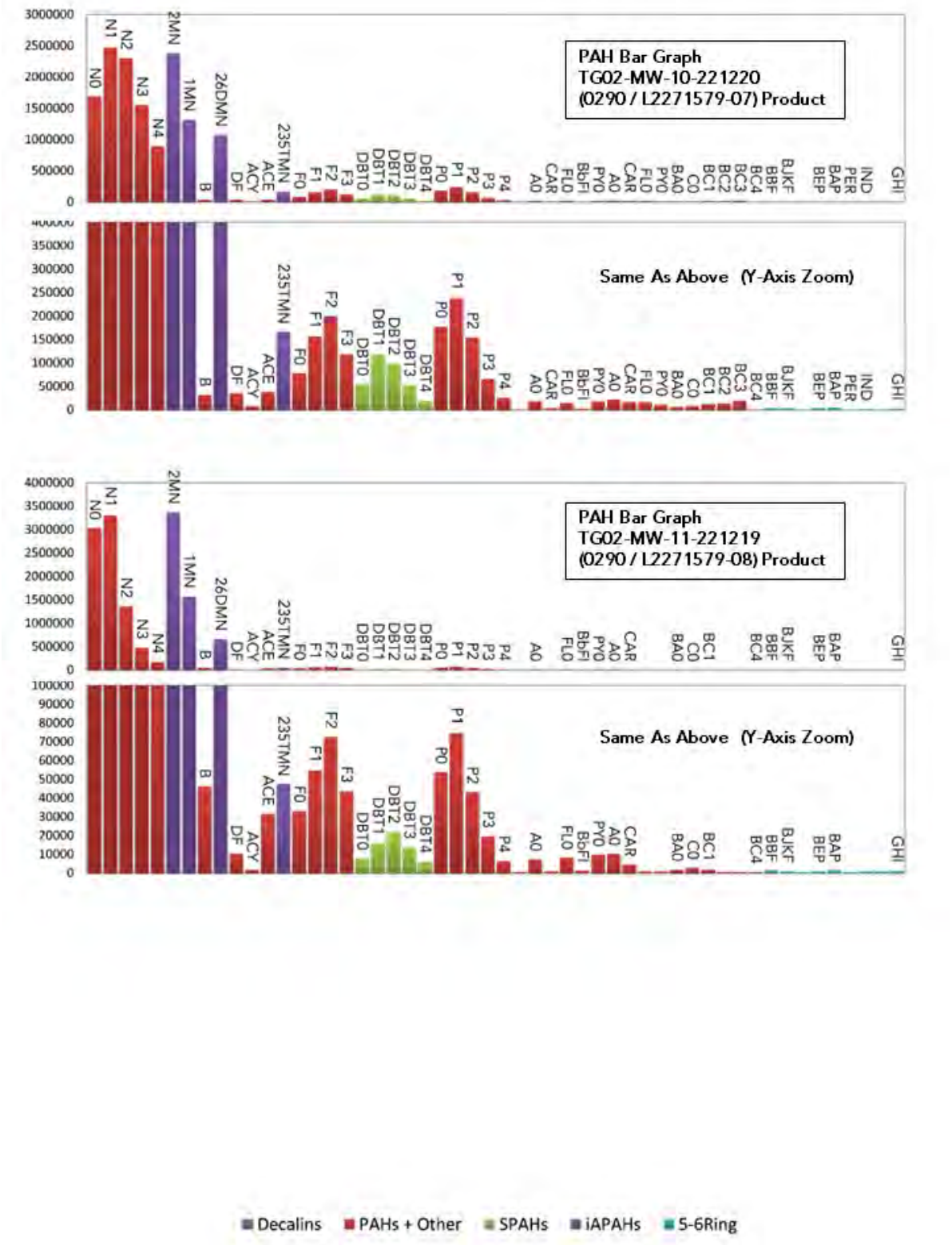

Figure 16. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

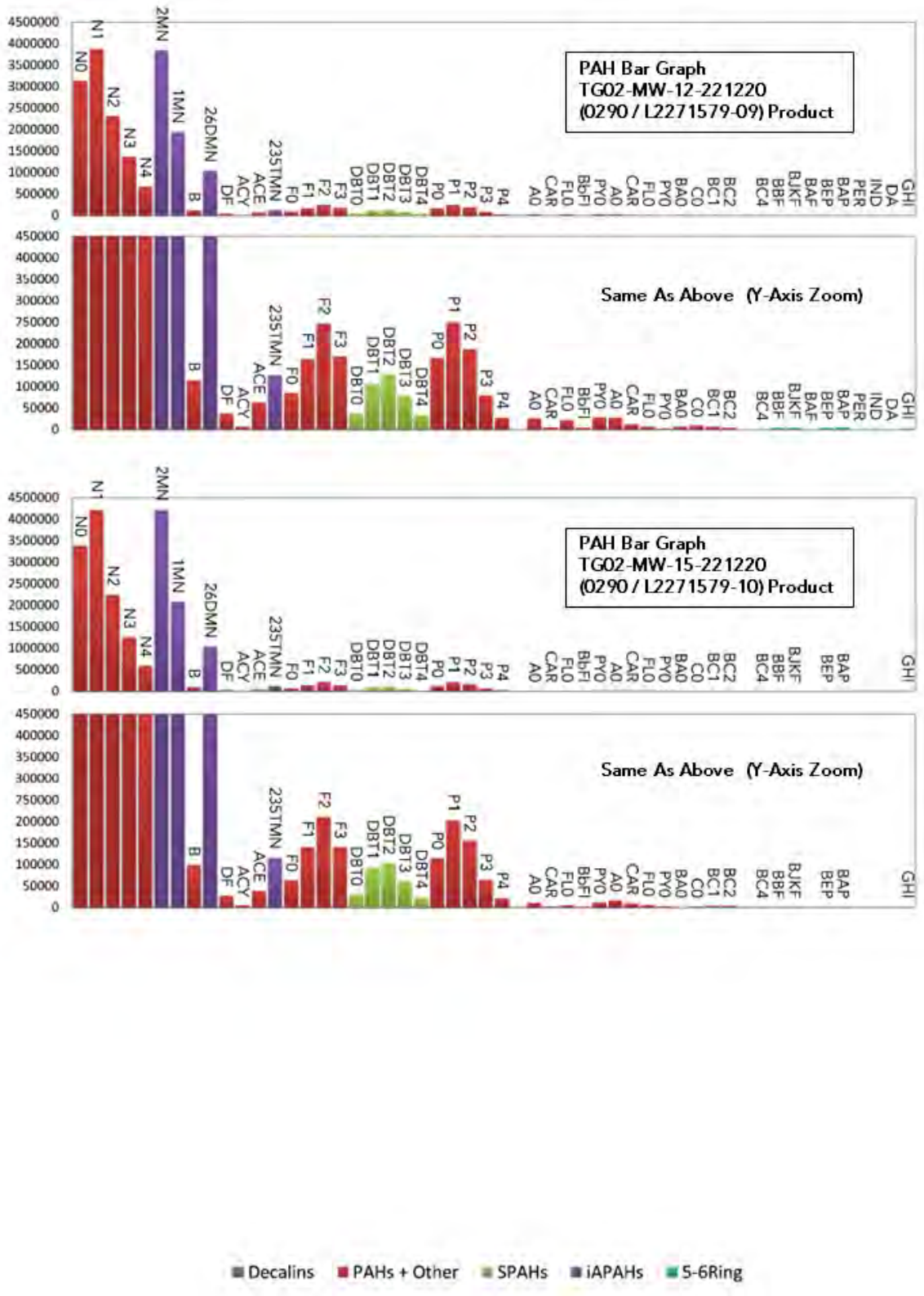

Figure 17. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

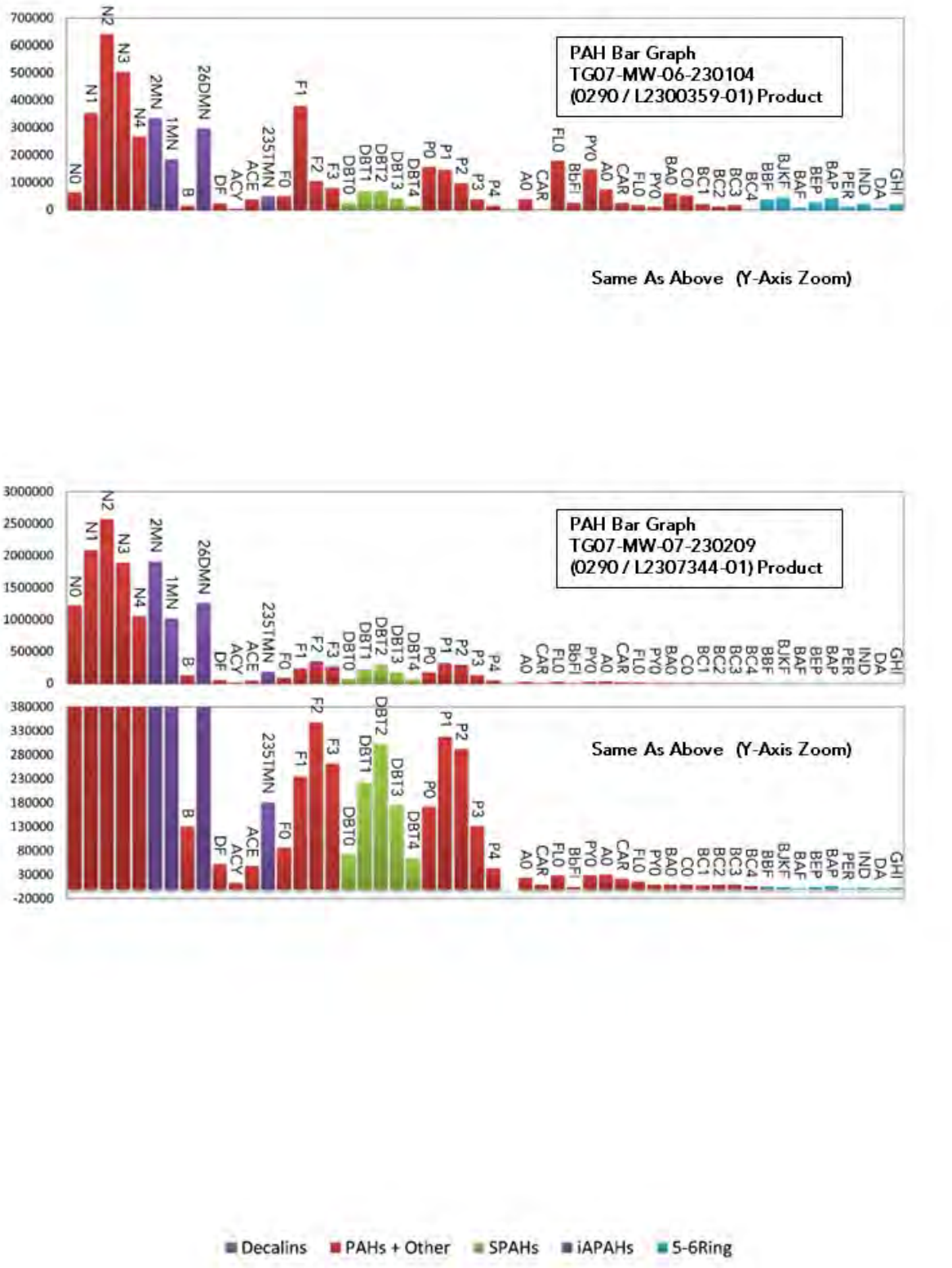

Figure 18. Fingerprint Mosaics™ for product samples – Parent and Alkylated PAH Bar Graphs.

Residual Range Petroleum Biomarkers Bar Graphs

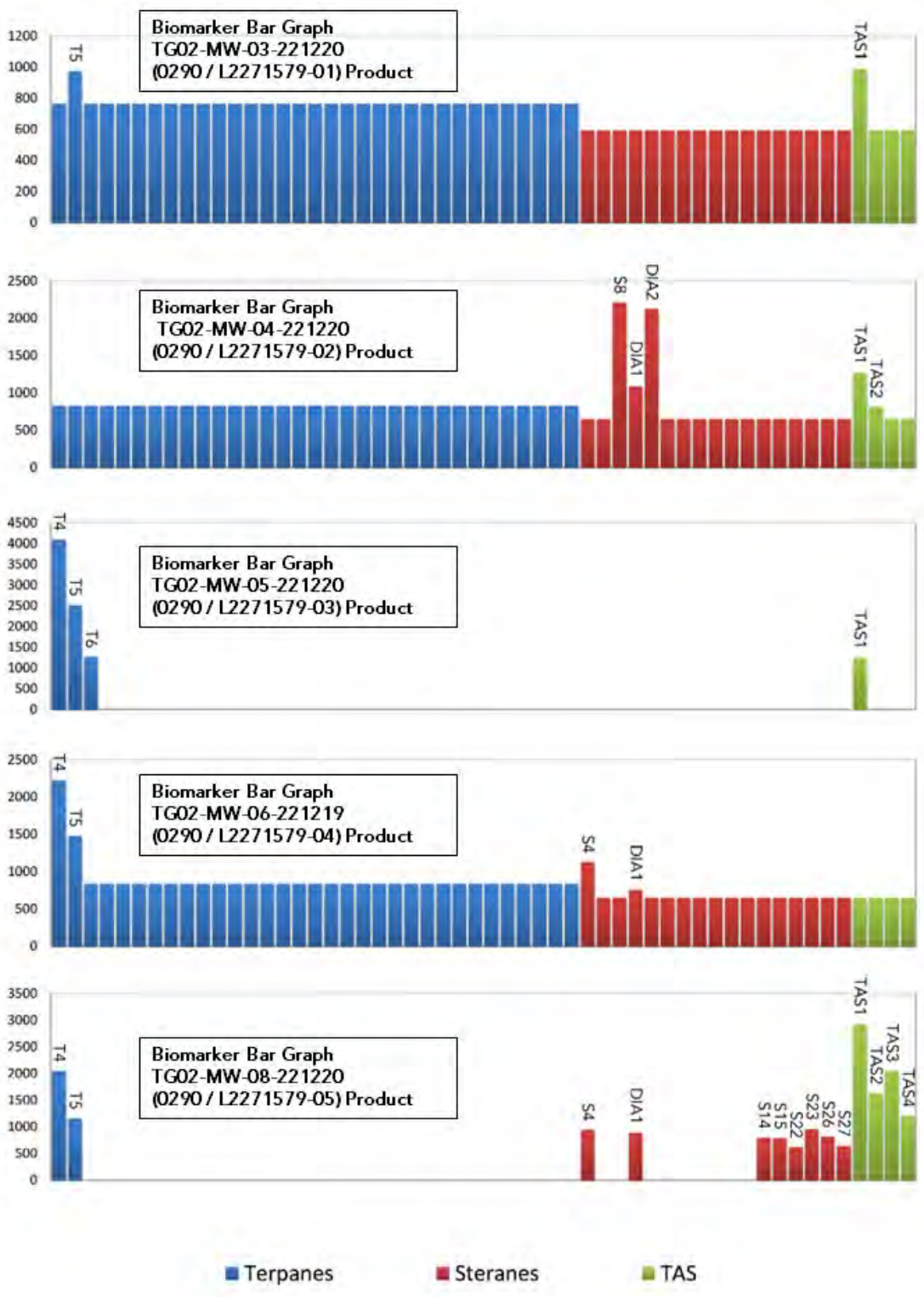

Figure 19. Fingerprint Mosaics™ for product samples – Residual Range Petroleum Biomarkers Bar Graphs.

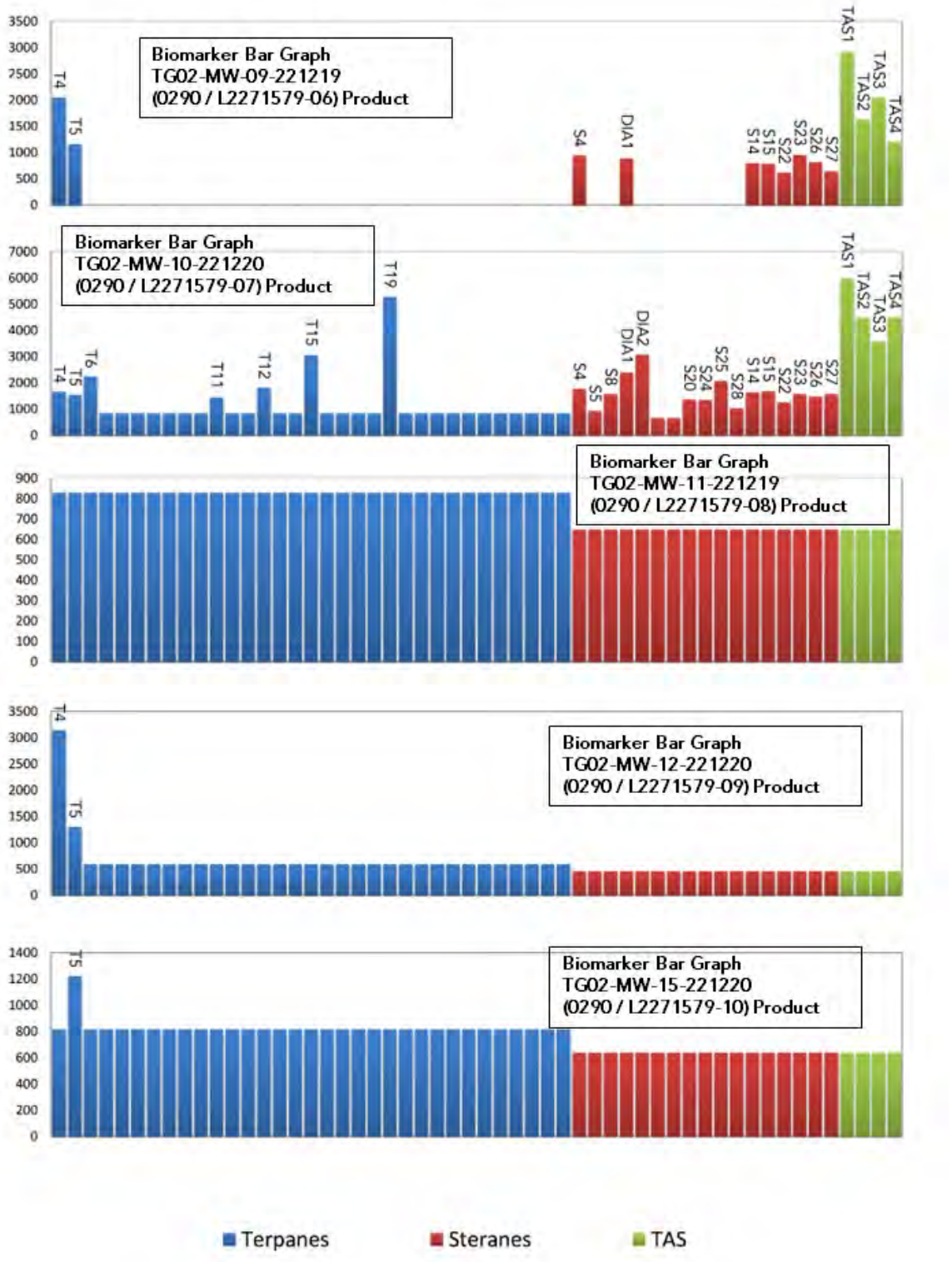

Figure 20. Fingerprint Mosaics™ for product samples – Residual Range Petroleum Biomarkers Bar Graphs.

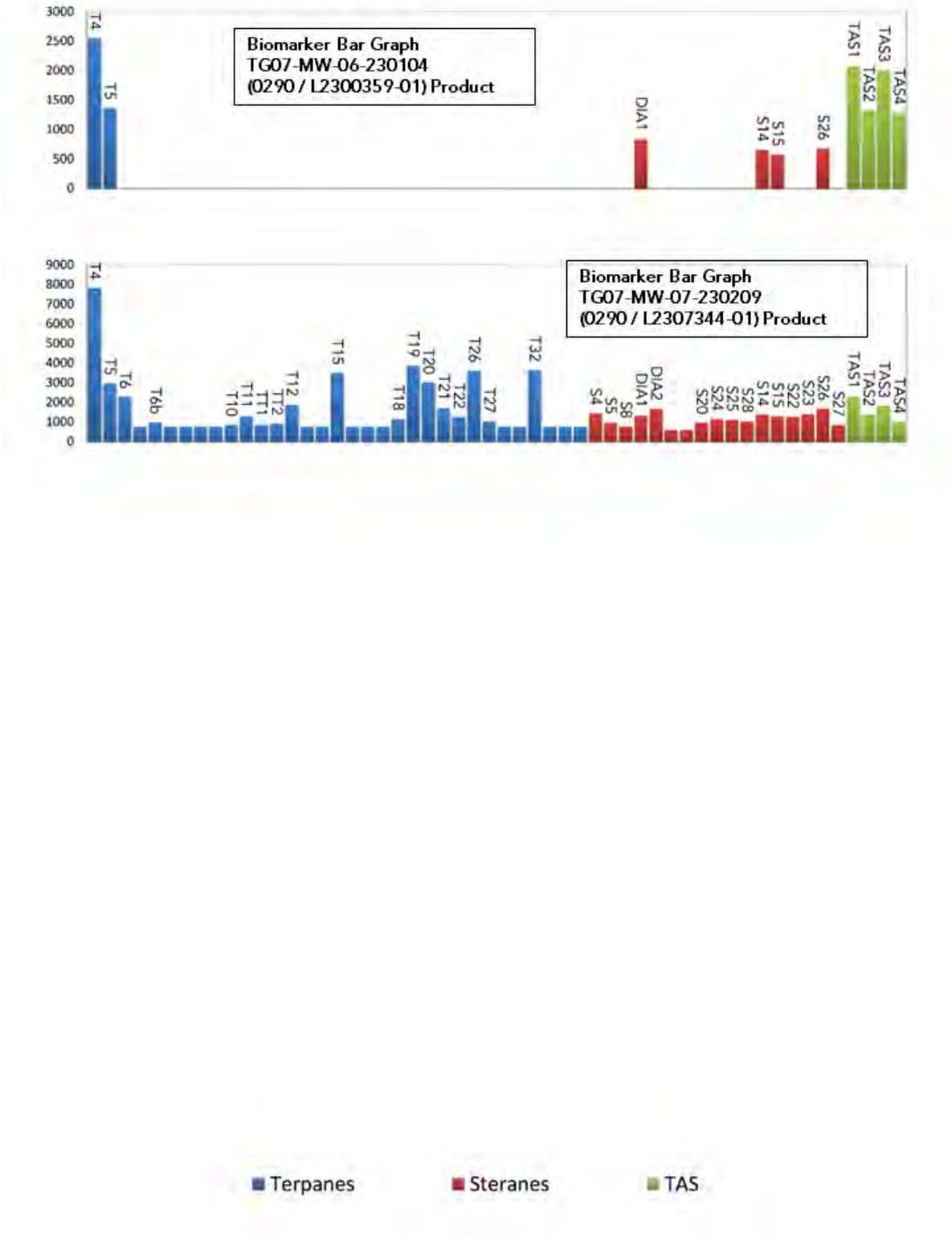

Figure 21. Fingerprint Mosaics™ for product samples – Residual Range Petroleum Biomarkers Bar Graphs.

GC/FID SVOC Chromatograms

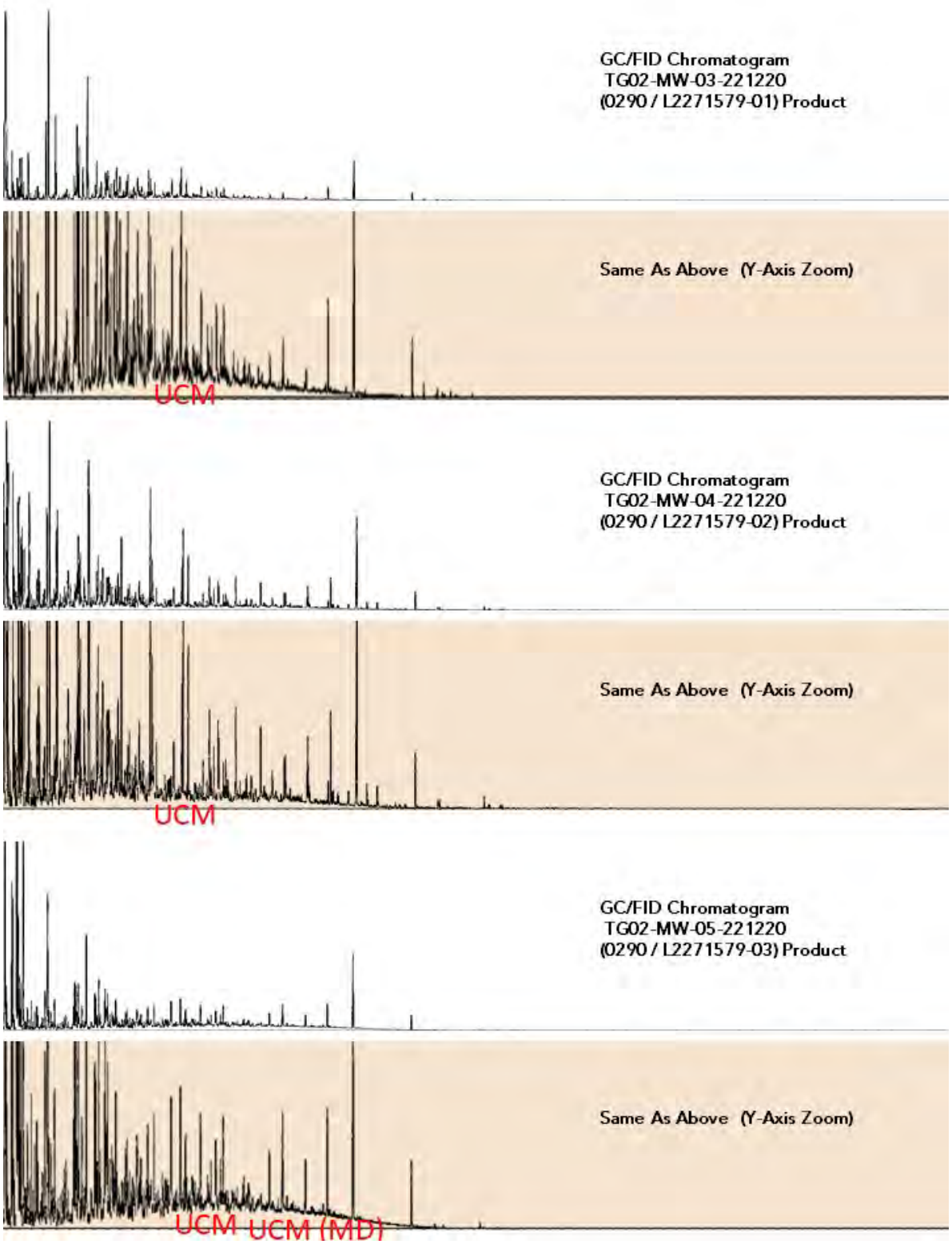

Figure 22. Fingerprint Mosaics™ for product samples – GC/FID Chromatograms.

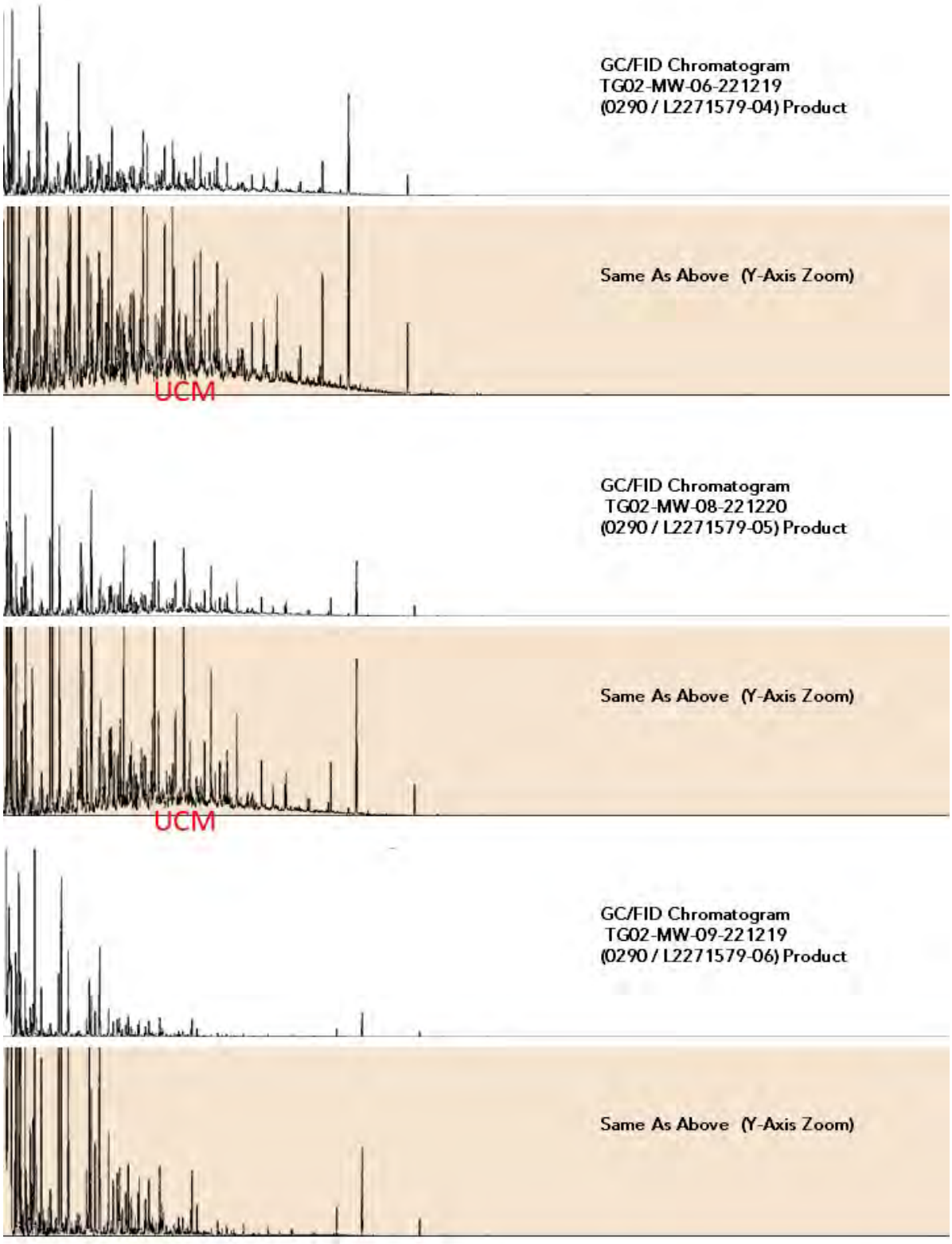

Figure 23. Fingerprint Mosaics™ for product samples – GC/FID Chromatograms.

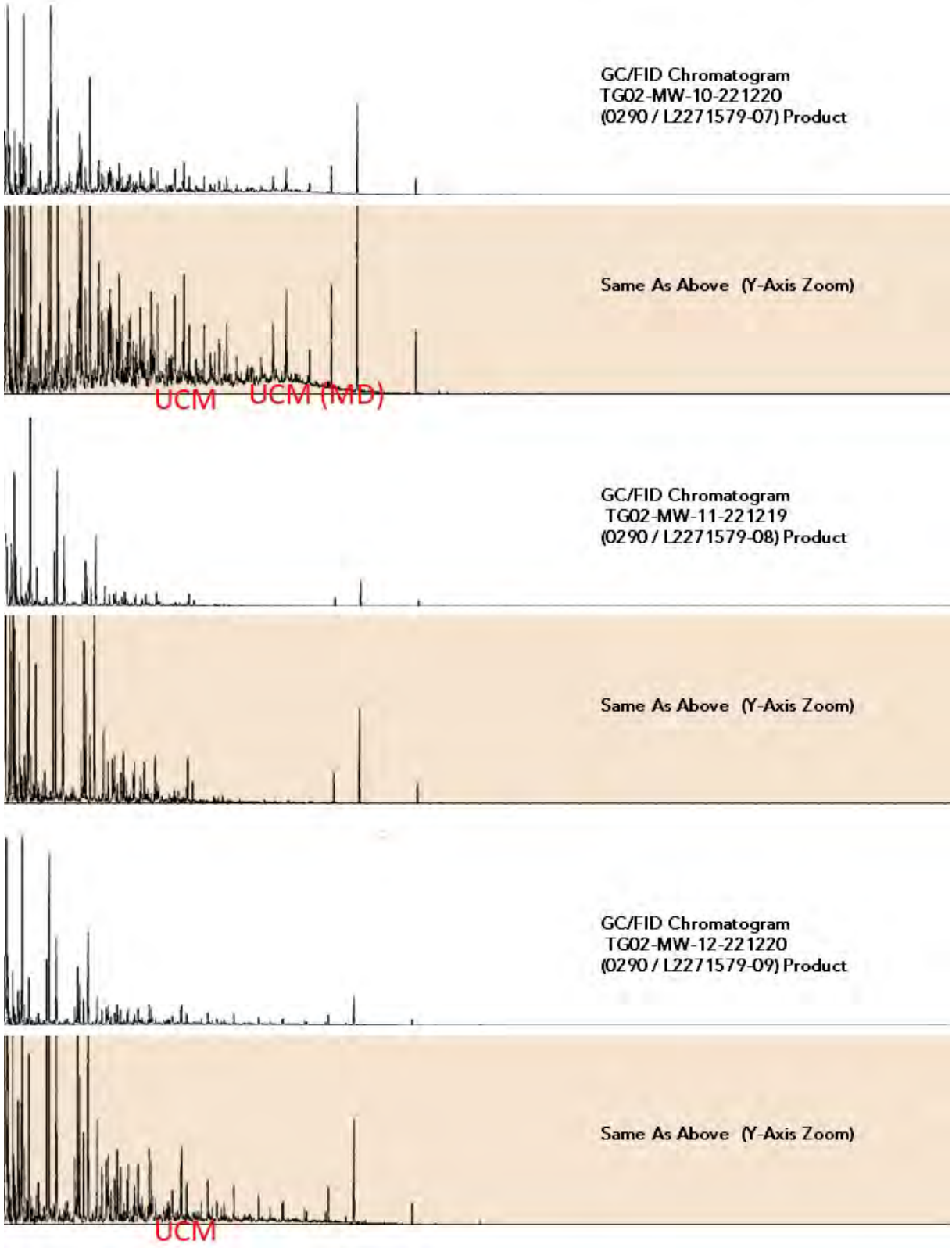

Figure 24. Fingerprint Mosaics™ for product samples – GC/FID Chromatograms.

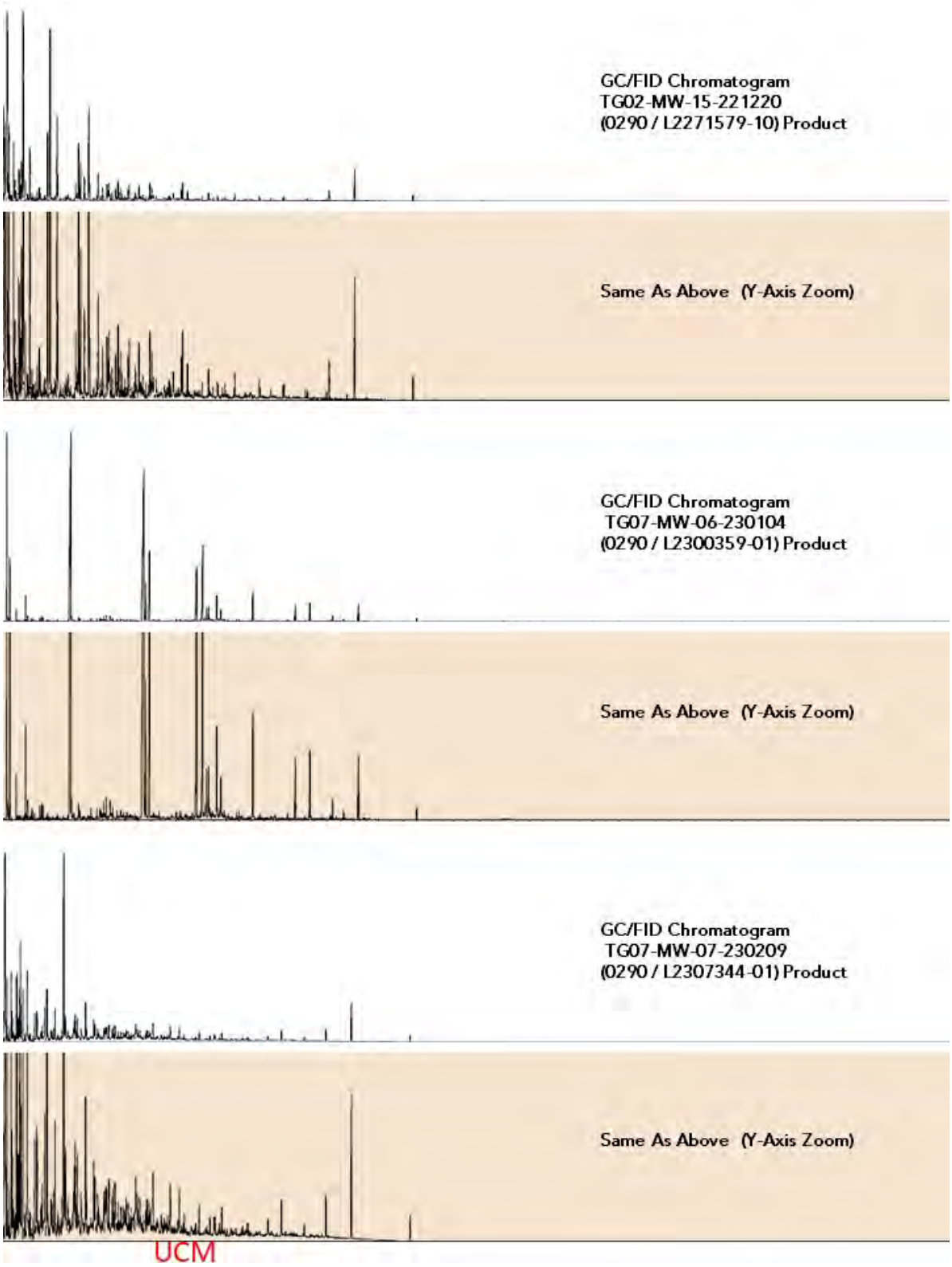

Figure 25. Fingerprint Mosaics™ for product samples – GC/FID Chromatograms.

N-Paraffins (85 m/z) SVOC Chromatograms

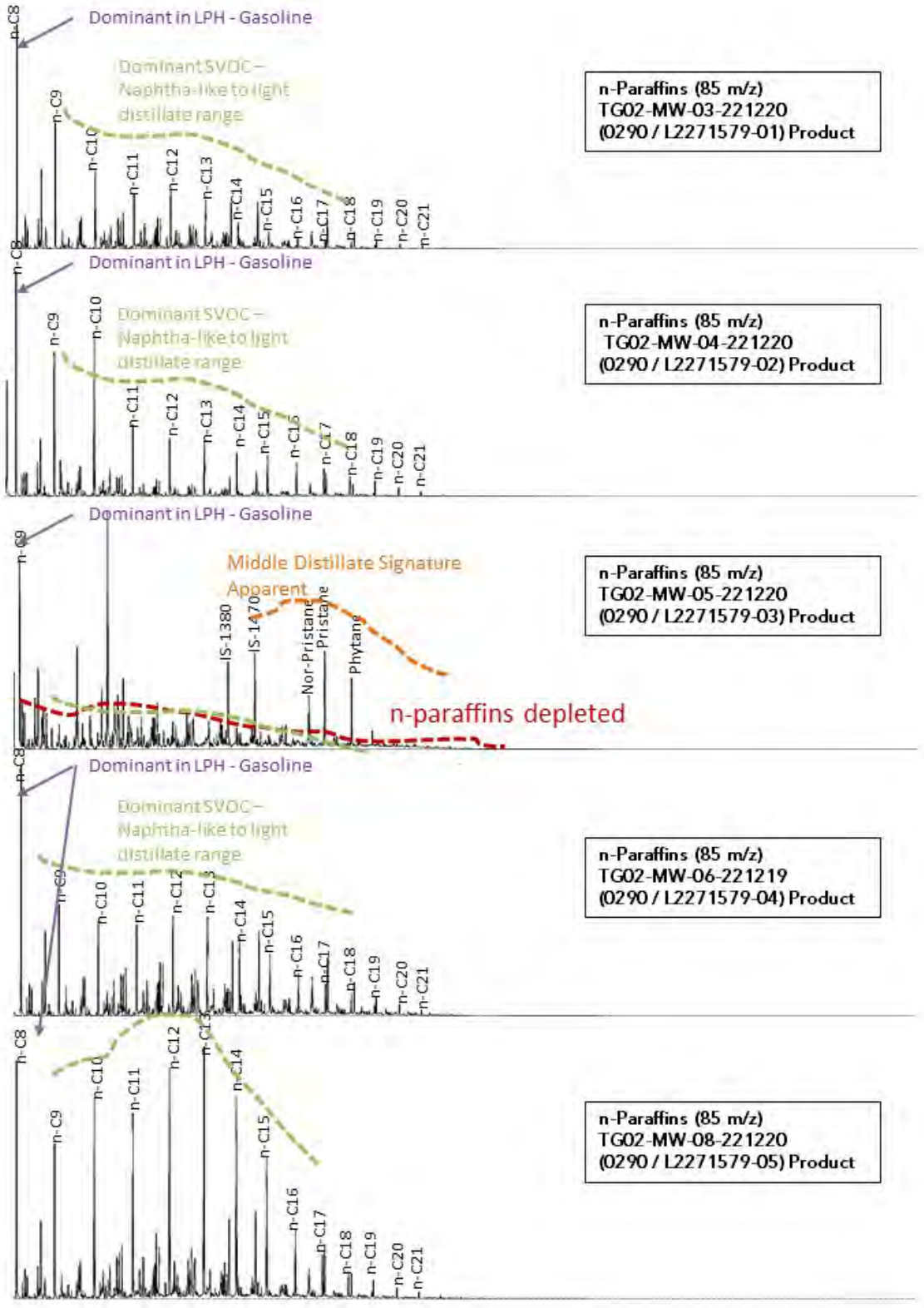

Figure 26. Fingerprint Mosaics™ for product samples – n-paraffins 85 m/z ion traces.

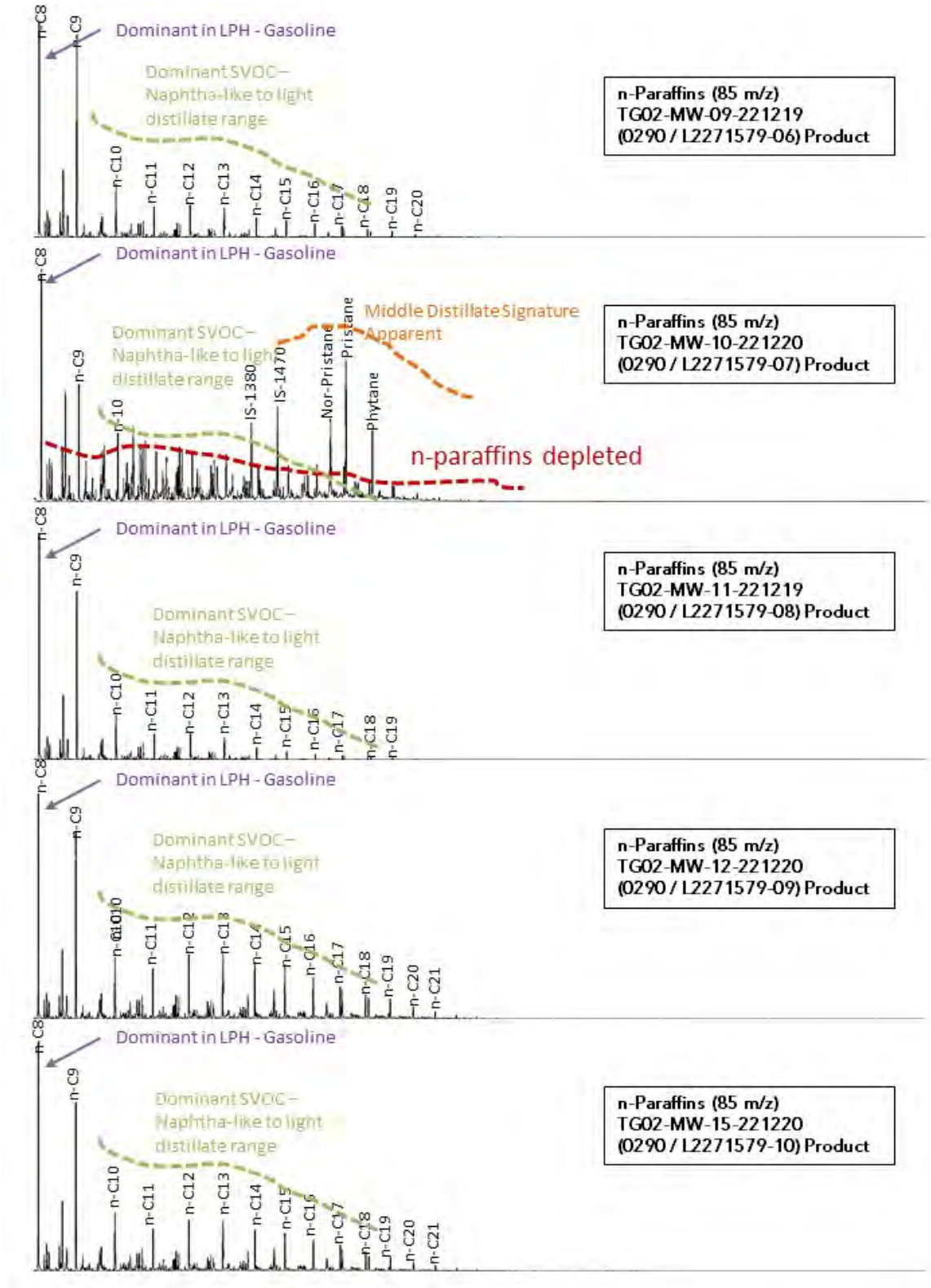

Figure 27. Fingerprint Mosaics™ for product samples – n-paraffins 85 m/z ion traces.

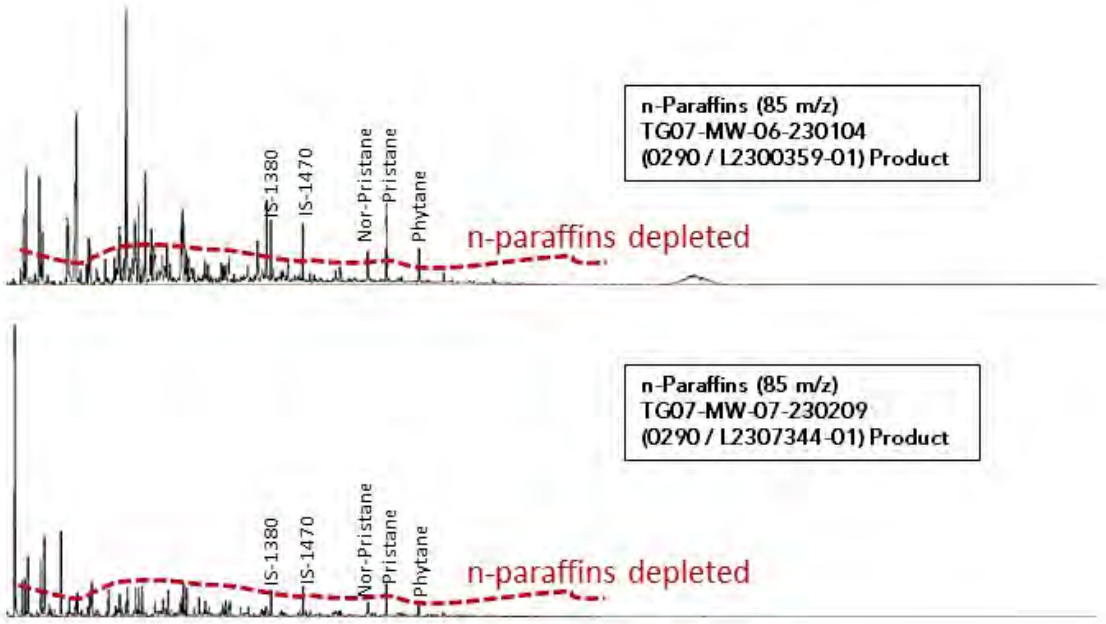

Figure 28. Fingerprint Mosaics™ for product samples – n-paraffins 85 m/z ion traces.

Alkylcyclohexanes (83 m/z)
SVOC Chromatograms

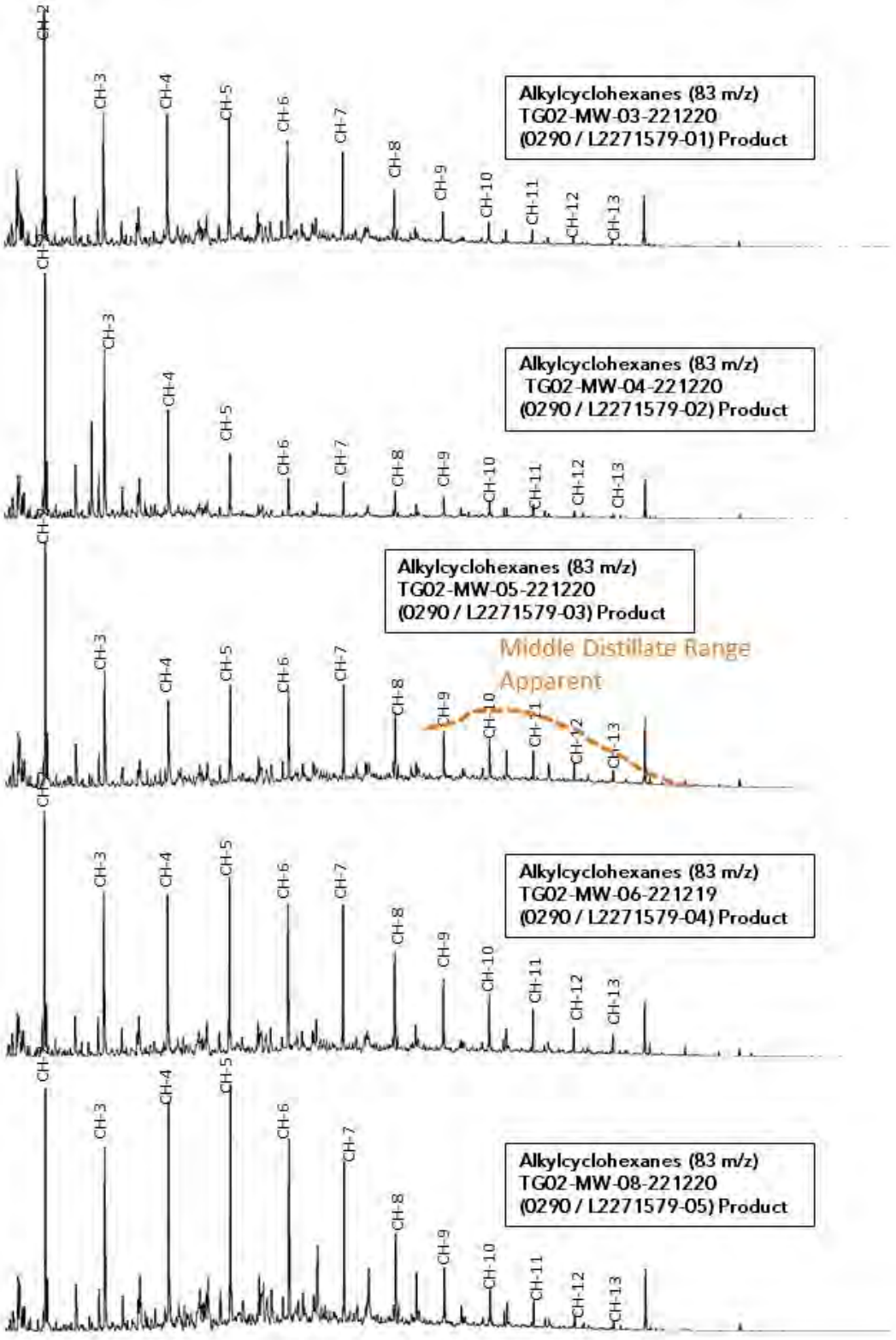

Figure 29. Fingerprint Mosaics™ for product samples – Alkycyclohexanes 83 m/z ion traces.

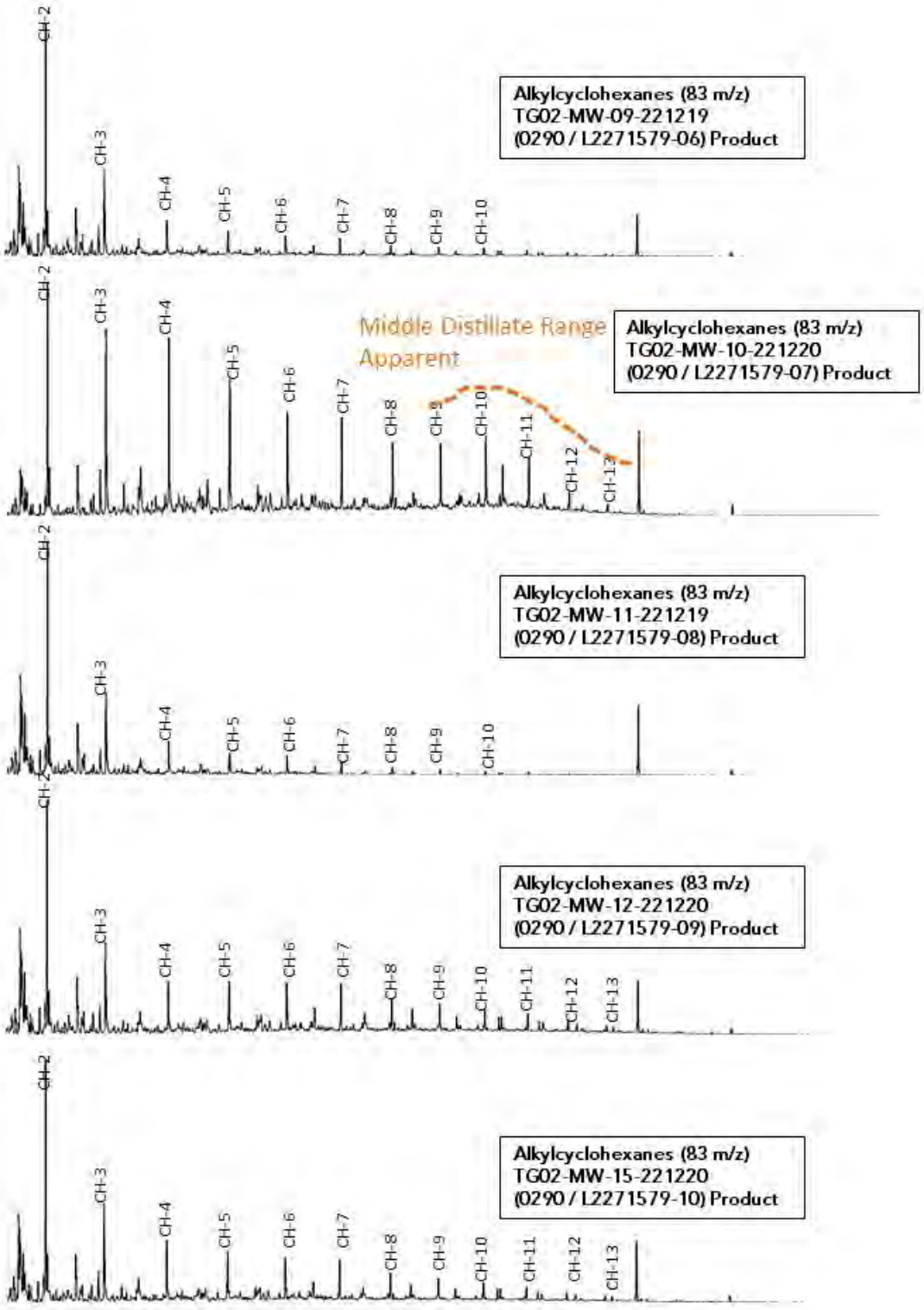

Figure 30. Fingerprint Mosaics™ for product samples – Alkycyclohexanes 83 m/z ion traces.

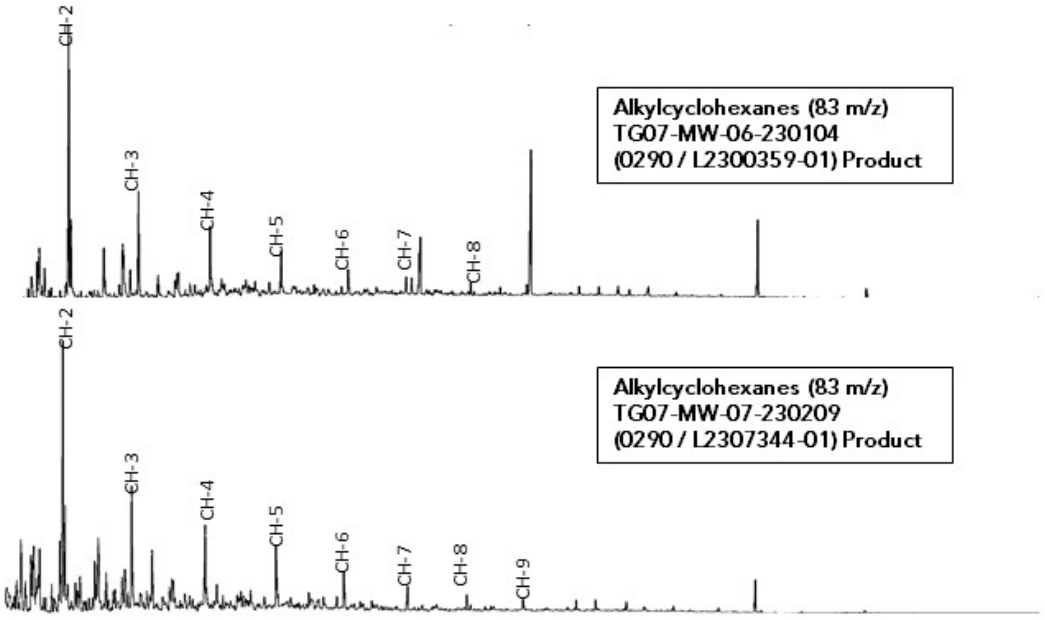

Figure 31. Fingerprint Mosaics™ for product samples – Alkycyclohexanes 83 m/z ion traces.

Bicyclanes (123 m/z) SVOC Chromatograms

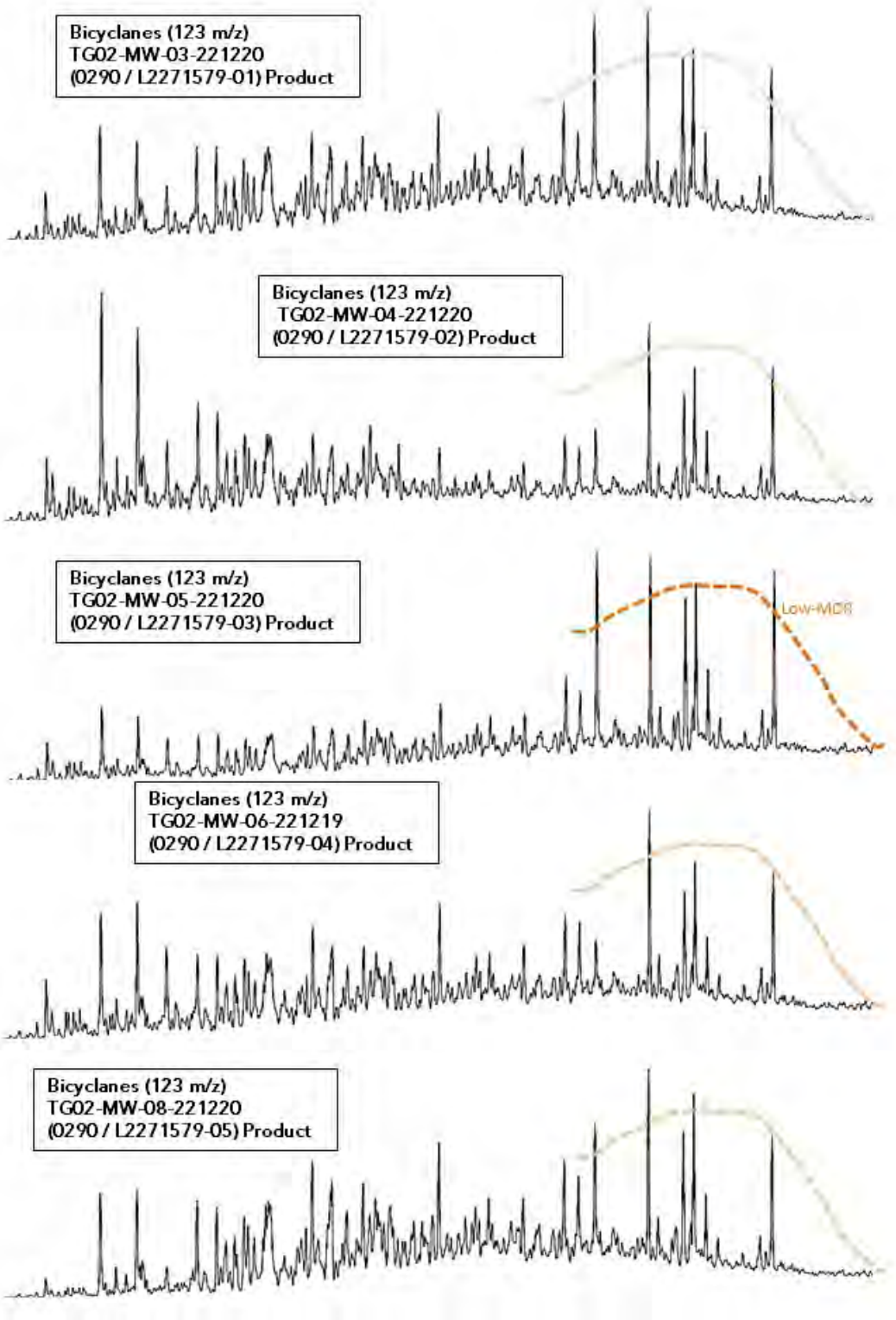

Figure 32. Fingerprint Mosaics™ for product samples – Bicyclanes 123 m/z ion traces.

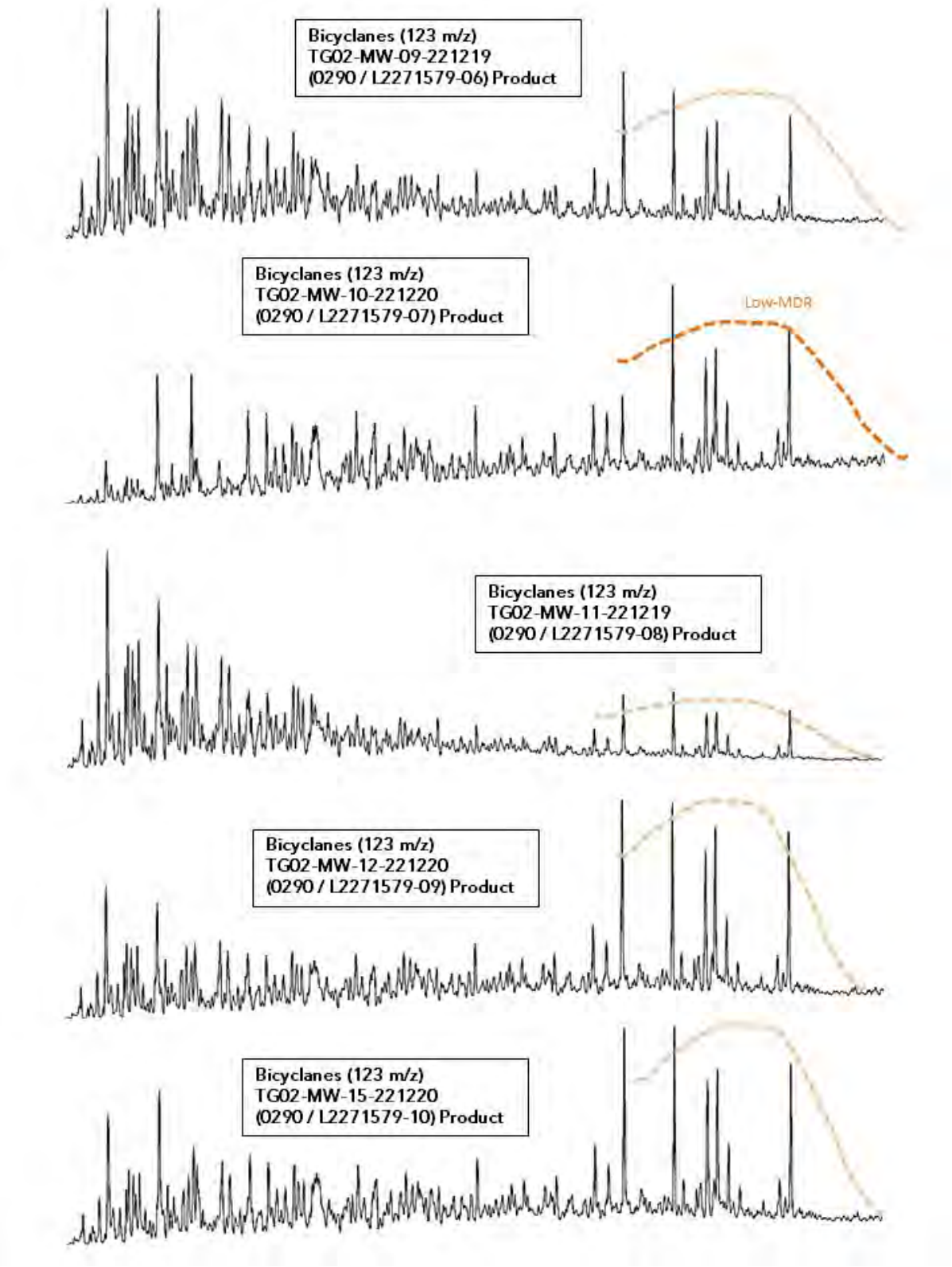

Figure 33. Fingerprint Mosaics™ for product samples – Bicyclanes 123 m/z ion traces.

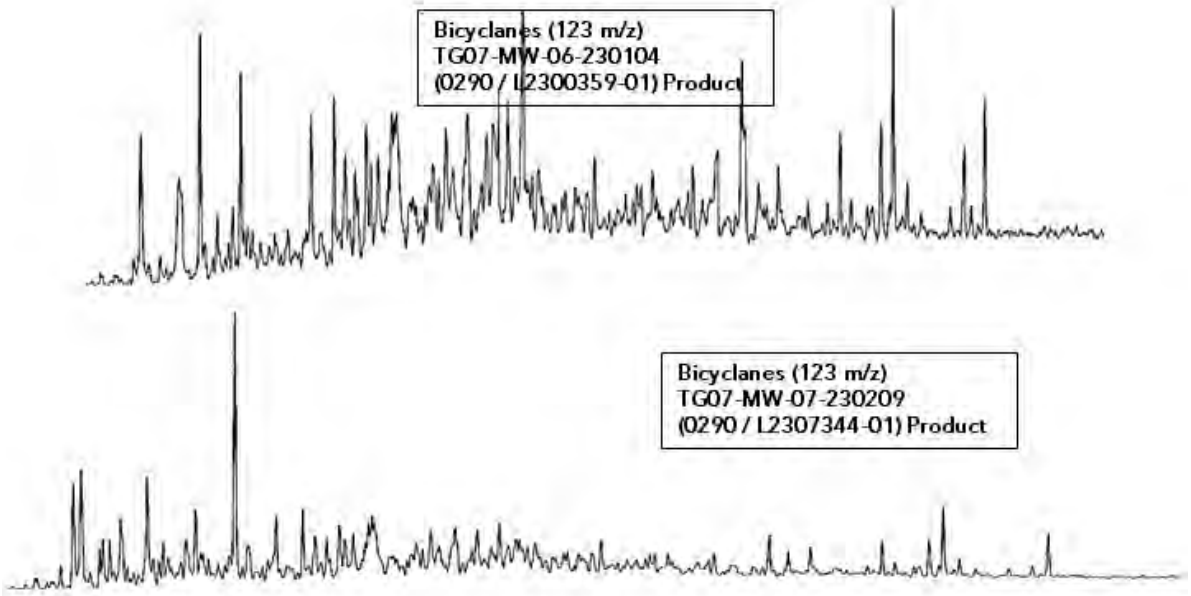

Figure 34. Fingerprint Mosaics™ for product samples – Bicyclanes 123 m/z ion traces.

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. William Schmidt
Ransom Consulting LLC
2127 Hamilton Ave
Hamilton New Jersey 08619

JOB DESCRIPTION

PES Refinery

JOB NUMBER

680-223928-1

Eurofins Savannah
5102 LaRoche Avenue
Savannah GA31404

myEOL

Definitions/Glossary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-223928-1	GPR794-01R-SS01	Solid	10/21/22 12:00	10/25/22 10:30
680-223928-2	GPR794-02R-SS01	Solid	10/21/22 12:10	10/25/22 10:30
680-223928-3	GPR794-03R-SS01	Solid	10/21/22 12:20	10/25/22 10:30
680-223928-4	GPR794-04R-SS01	Solid	10/21/22 12:30	10/25/22 10:30
680-223928-5	GPR794-05R-SS01	Solid	10/21/22 12:40	10/25/22 10:30
680-223928-6	GPR794-06R-SS01	Solid	10/21/22 12:50	10/25/22 10:30
680-223928-7	GPR794-07R-SS01	Solid	10/21/22 13:00	10/25/22 10:30
680-223928-8	GPR794-08R-SS01	Solid	10/21/22 13:10	10/25/22 10:30

Case Narrative

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Job ID: 680-223928-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-223928-1

Revision
Per client request, the sample ID's have been revised.

Comments
No additional comments.

Receipt
The samples were received on 10/25/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.7º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: GPR794-01R-SS01 — Lab Sample ID: 680-223928-1

Date Collected: 10/21/22 12:00 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.8	U	9.5	2.8	mg/Kg			11/04/22 14:58	1

Client Sample ID: GPR794-02R-SS01 — Lab Sample ID: 680-223928-2

Date Collected: 10/21/22 12:10 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 15:20	1

Client Sample ID: GPR794-03R-SS01 — Lab Sample ID: 680-223928-3

Date Collected: 10/21/22 12:20 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 15:43	1

Client Sample ID: GPR794-04R-SS01 — Lab Sample ID: 680-223928-4

Date Collected: 10/21/22 12:30 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.9	2.9	mg/Kg			11/04/22 16:06	1

Client Sample ID: GPR794-05R-SS01 — Lab Sample ID: 680-223928-5

Date Collected: 10/21/22 12:40 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.7	U	9.3	2.7	mg/Kg			11/04/22 16:29	1

Client Sample ID: GPR794-06R-SS01 — Lab Sample ID: 680-223928-6

Date Collected: 10/21/22 12:50 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.6	U	9.1	2.6	mg/Kg			11/04/22 16:51	1

Client Sample ID: GPR794-07R-SS01 — Lab Sample ID: 680-223928-7

Date Collected: 10/21/22 13:00 — **Matrix: Solid**
Date Received: 10/25/22 10:30

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.8	U	9.7	2.8	mg/Kg			11/04/22 17:14	1

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-08R-SS01
Date Collected: 10/21/22 13:10
Date Received: 10/25/22 10:30

Lab Sample ID: 680-223928-8
Matrix: Solid

Method: SW846 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.7	U	9.3	2.7	mg/Kg			11/04/22 17:37	1

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 680-748612/1-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetraethylene Glycol	2.9	U	9.8	2.9	mg/Kg			11/04/22 14:35	1

Lab Sample ID: LCS 680-748612/2-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Tetraethylene Glycol			39.6	41.7		mg/Kg		105	10 - 197		

Lab Sample ID: LCSD 680-748612/3-A
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetraethylene Glycol			37.2	34.8		mg/Kg		94	10 - 197	18	50

Lab Sample ID: 680-223928-7 MS
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: GPR794-07R-SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Tetraethylene Glycol	2.8	U	38.8	12.3		mg/Kg		32	10 - 197		

Lab Sample ID: 680-223928-7 MSD
Matrix: Solid
Analysis Batch: 748845

Client Sample ID: GPR794-07R-SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetraethylene Glycol	2.8	U	40.0	20.2		mg/Kg		51	10 - 197	48	50

QC Association Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

GC Semi VOA

Leach Batch: 748612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Soluble	Solid	DI Leach	
680-223928-2	GPR794-02R-SS01	Soluble	Solid	DI Leach	
680-223928-3	GPR794-03R-SS01	Soluble	Solid	DI Leach	
680-223928-4	GPR794-04R-SS01	Soluble	Solid	DI Leach	
680-223928-5	GPR794-05R-SS01	Soluble	Solid	DI Leach	
680-223928-6	GPR794-06R-SS01	Soluble	Solid	DI Leach	
680-223928-7	GPR794-07R-SS01	Soluble	Solid	DI Leach	
680-223928-8	GPR794-08R-SS01	Soluble	Solid	DI Leach	
MB 680-748612/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 680-748612/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 680-748612/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
680-223928-7 MS	GPR794-07R-SS01	Soluble	Solid	DI Leach	
680-223928-7 MSD	GPR794-07R-SS01	Soluble	Solid	DI Leach	

Analysis Batch: 748845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Soluble	Solid	8015D	748612
680-223928-2	GPR794-02R-SS01	Soluble	Solid	8015D	748612
680-223928-3	GPR794-03R-SS01	Soluble	Solid	8015D	748612
680-223928-4	GPR794-04R-SS01	Soluble	Solid	8015D	748612
680-223928-5	GPR794-05R-SS01	Soluble	Solid	8015D	748612
680-223928-6	GPR794-06R-SS01	Soluble	Solid	8015D	748612
680-223928-7	GPR794-07R-SS01	Soluble	Solid	8015D	748612
680-223928-8	GPR794-08R-SS01	Soluble	Solid	8015D	748612
MB 680-748612/1-A	Method Blank	Soluble	Solid	8015D	748612
LCS 680-748612/2-A	Lab Control Sample	Soluble	Solid	8015D	748612
LCSD 680-748612/3-A	Lab Control Sample Dup	Soluble	Solid	8015D	748612
680-223928-7 MS	GPR794-07R-SS01	Soluble	Solid	8015D	748612
680-223928-7 MSD	GPR794-07R-SS01	Soluble	Solid	8015D	748612

General Chemistry

Analysis Batch: 748590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-223928-1	GPR794-01R-SS01	Total/NA	Solid	Moisture	
680-223928-2	GPR794-02R-SS01	Total/NA	Solid	Moisture	
680-223928-3	GPR794-03R-SS01	Total/NA	Solid	Moisture	
680-223928-4	GPR794-04R-SS01	Total/NA	Solid	Moisture	
680-223928-5	GPR794-05R-SS01	Total/NA	Solid	Moisture	
680-223928-6	GPR794-06R-SS01	Total/NA	Solid	Moisture	
680-223928-7	GPR794-07R-SS01	Total/NA	Solid	Moisture	
680-223928-8	GPR794-08R-SS01	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-01R-SS01
Lab Sample ID: 680-223928-1
Date Collected: 10/21/22 12:00
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.26 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 14:58	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-02R-SS01
Lab Sample ID: 680-223928-2
Date Collected: 10/21/22 12:10
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 15:20	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-03R-SS01
Lab Sample ID: 680-223928-3
Date Collected: 10/21/22 12:20
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.07 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 15:43	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-04R-SS01
Lab Sample ID: 680-223928-4
Date Collected: 10/21/22 12:30
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:06	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Client Sample ID: GPR794-05R-SS01
Lab Sample ID: 680-223928-5
Date Collected: 10/21/22 12:40
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.36 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:29	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-06R-SS01
Lab Sample ID: 680-223928-6
Date Collected: 10/21/22 12:50
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.48 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 16:51	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-07R-SS01
Lab Sample ID: 680-223928-7
Date Collected: 10/21/22 13:00
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.14 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 17:14	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Client Sample ID: GPR794-08R-SS01
Lab Sample ID: 680-223928-8
Date Collected: 10/21/22 13:10
Matrix: Solid
Date Received: 10/25/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.37 g	5 mL	748612	11/03/22 11:48	GEM	EET SAV
Soluble	Analysis	8015D		1	1 mL	1 mL	748845	11/04/22 17:37	JCK	EET SAV
	Instrument ID: CVGG2									
Total/NA	Analysis	Moisture		1			748590	11/03/22 10:14	TD	EET SAV
	Instrument ID: NOEQUIP									

Laboratory References:
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-23
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas DEQ	State	19-015-0	02-01-23
California	State	2939	06-30-22 *
Connecticut	State	PH-0161	03-31-23
Florida	NELAP	E87052	06-23-23
Georgia	State	E87052	06-30-23
Georgia (DW)	State	803	06-30-23
Guam	State	19-007R	04-17-23
Hawaii	State	<cert No.>	06-30-23
Illinois	NELAP	200022	11-30-22
Indiana	State	C-GA-02	06-30-23
Iowa	State	353	07-01-23
Kentucky (UST)	State	NA	06-30-23
Louisiana	NELAP	30690	06-30-23
Louisiana (All)	NELAP	30690	06-30-23
Louisiana (DW)	State	LA009	12-31-22
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-22
Massachusetts	State	M-GA006	07-30-23
Michigan	State	9925	06-30-23
Mississippi	State	<cert No.>	06-30-23
Nebraska	State	NE-OS-7-04	06-30-23
New Jersey	NELAP	GA769	06-30-23
New Mexico	State	GA00006	06-30-23
New York	NELAP	10842	04-01-23
North Carolina (DW)	State	13701	07-31-23
North Carolina (WW/SW)	State	269	12-31-22
Pennsylvania	NELAP	68-00474	06-30-23
Puerto Rico	State	GA00006	01-01-23
South Carolina	State	98001	06-30-22 *
Tennessee	State	TN02961	06-30-23
Texas	NELAP	T1047004185-19-14	11-30-22
Texas	TCEQ Water Supply	T104704185	06-30-23
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-23
Wisconsin	State	999819810	08-31-23
Wyoming	State	8TMS-L	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ransom Consulting LLC
Project/Site: PES Refinery

Job ID: 680-223928-1

Method	Method Description	Protocol	Laboratory
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET SAV
Moisture	Percent Moisture	EPA	EET SAV
DI Leach	Deionized Water Leaching Procedure	ASTM	EET SAV

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Chain of Custody Record

550316

eurofins | Environment TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-

Client Contact	Project Manager: William Schmidt	Site Contact: Sheila H.	Date:	COC No
Company Name: Ransom Consulting	Tel/Email: william schmidt @ ransom.env	Lab Contact:	Carrier:	1 of 1 COCs
Address: 2127 Hamilton Ave	Analysis Turnaround Time			Sampler:
City/State/Zip: Plain Hamilton, NJ 08619	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: (609) 584-0090	TAT if different from Below: STD			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: PES Refinery - Tank Group 07	☐ 1 week			
Site: PES Refinery	☐ 2 days			Job / SDG No:
PO#: 200 00135	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TEG	Sample Specific Notes
GPR794-01R-5501	10/21	1200	G	S				1	
GPR794-02R-5501		1210						1	
GPR794-03R-5501		1220						1	
GPR794-04R-5501		1230						1	
GPR794-05R-5501		1240						1	
GPR794-06R-5501		1250						1	
GPR794-07R-5501		1300						1	
GPR794-08R-5501		1310						1	

680-223928 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

__ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
SHIP TO SAVANNAH LAB TEMP 4.7 - 4.7

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by:	Company: Ransom Consulting	Date/Time: 10/24/22 1700	Received by:	Company: Impulse	Date/Time: 10/24/22 17:27
Relinquished by:	Company:	Date/Time:	Received by: Tyneshea Hamlett	Company:	Date/Time: 10/24/22 1730
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 10-25-22

3.5 | 3.5 289 A

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11/15/2022 (Rev. 1)

Login Sample Receipt Checklist

Client: Ransom Consulting LLC

Job Number: 680-223928-1

Login Number: 223928
List Number: 1
Creator: Harley, Tynisha

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Savannah

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the {0} Project Manager.

Authorization

Generated
11/15/2022 2:27:07 PM
Revision 1

Authorized for release by
Sheila Hoffman, Project Manager II
Sheila.Hoffman@et.eurofinsus.com
Designee for
Grace Chang, Project Manager II
Grace.Chang@et.eurofinsus.com
(732)593-2579

ANALYTICAL REPORT

Lab Number:	L2238159
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	07/25/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2238159-01	GPR799-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:30	07/18/22
L2238159-02	GPR799-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:40	07/18/22
L2238159-03	GPR799-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 09:50	07/18/22
L2238159-04	GPR799-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:00	07/18/22
L2238159-05	GPR799-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:10	07/18/22
L2238159-06	GPR799-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:20	07/18/22
L2238159-07	GPR799-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:30	07/18/22
L2238159-08	GPR798-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:40	07/18/22
L2238159-09	GPR798-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:50	07/18/22
L2238159-10	GPR798-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:00	07/18/22
L2238159-11	GPR798-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:10	07/18/22
L2238159-12	GPR798-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:20	07/18/22
L2238159-13	GPR798-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:30	07/18/22
L2238159-14	GPR798-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:40	07/18/22
L2238159-15	FB-071822-01	WATER	PHILADELPHIA, PA	07/18/22 14:00	07/18/22
L2238159-16	FB-071822-02	WATER	PHILADELPHIA, PA	07/18/22 14:10	07/18/22
L2238159-17	DUP-47	SOIL	PHILADELPHIA, PA	07/18/22 00:00	07/18/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative (continued)

Report Revision

July 25, 2022: The Client IDs were amended on L2238159-01 through -14.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2238159-01D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (131%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (156%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-03D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (65%) due to interference with the Internal Standard.

L2238159-07D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (166%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-08D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (136%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (232%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238159-09: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (68%) due to interference with the Internal Standard.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative (continued)

L2238159-10: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (216%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-11D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (63%) due to interference with the Internal Standard.
L2238159-12: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (249%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-13D: The surrogate recovery is outside the acceptance criteria for toluene-d8 (146%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2238159-13D: The surrogate recovery is outside the method acceptance criteria for dibromofluoromethane (46%) due to interference with the Internal Standard.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 07/25/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-01 D
Client ID: GPR799-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 00:07
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.2		mg/kg	0.27	0.089	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	**131**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-02
Client ID: GPR799-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 18:24
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.6		mg/kg	0.056	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	**156**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-03 D
Client ID: GPR799-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 09:50
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:00
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	16.		mg/kg	0.45	0.15	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	**65**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-04 D
Client ID: GPR799-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:41
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	22.		mg/kg	0.22	0.073	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	130		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-05
Client ID: GPR799-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 19:17
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.7		mg/kg	0.046	0.015	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-06
Client ID: GPR799-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 19:44
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.3		mg/kg	0.052	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-07 D
Client ID: GPR799-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 22:49
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.71		mg/kg	0.10	0.034	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**166**	Q	70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-08 D
Client ID: GPR798-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:15
Analyst: JC
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	3.4		mg/kg	0.094	0.031	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	86		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-09
Client ID: GPR798-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:50
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 20:11
Analyst: JC
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	6.2		mg/kg	0.12	0.040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	**232**	Q	70-130
Dibromofluoromethane	**68**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-10
Client ID: GPR798-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 20:37
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.40		mg/kg	0.069	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**216**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-11 D
Client ID: GPR798-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:26
Analyst: JC
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	14.		mg/kg	0.43	0.14	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	**63**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-12
Client ID: GPR798-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 21:30
Analyst: JC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1.4		mg/kg	0.052	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	**249**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-13 D
Client ID: GPR798-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 15:53
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.2		mg/kg	0.13	0.043	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	**146**	Q	70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	**46**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-14 D
Client ID: GPR798-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:40
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/22 22:23
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7.8		mg/kg	0.10	0.035	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	128		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-15
Client ID: FB-071822-01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:01
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-16
Client ID: FB-071822-02
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:25
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238159
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-17 D
Client ID: DUP-47
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 00:33
Analyst: JC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	5900		mg/kg	58	19.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 16:38
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02,04-10,12,14,17 Batch: WG1665199-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:29
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 15-16 Batch: WG1665431-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:50
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 03,11,13 Batch: WG1665578-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02,04-10,12,14,17 Batch: WG1665199-3 WG1665199-4								
Benzene	77		80		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	98		97		70-130
Dibromofluoromethane	102		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 15-16 Batch: WG1665431-3 WG1665431-4								
Benzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	98		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 03,11,13 Batch: WG1665578-3 WG1665578-4								
Benzene	88		84		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	76		75		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	78		77		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-01
Client ID: GPR799-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 09:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.0		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-02
Client ID: GPR799-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 09:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-03
Client ID: GPR799-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 09:50
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.8		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-04
Client ID: GPR799-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.3		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-05
Client ID: GPR799-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:10
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.7		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-06
Client ID: GPR799-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:20
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-07
Client ID: GPR799-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-08
Client ID: GPR798-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-09
Client ID: GPR798-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:50
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-10
Client ID: GPR798-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.3		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-11
Client ID: GPR798-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:10
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.5		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-12
Client ID: GPR798-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:20
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.4		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-13
Client ID: GPR798-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.6		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-14
Client ID: GPR798-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:40
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238159
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238159-17
Client ID: DUP-47
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	07/19/22 09:58	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238159

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-14,17 QC Batch ID: WG1664527-1 QC Sample: L2238159-01 Client ID: GPR799-01-SS01						
Solids, Total	88.0	87.2	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-01A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-01B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-01C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-01D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-02A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-02B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-02C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-02D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-03A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-03B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-03C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-03D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-04A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-04B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-04C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-04D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-05A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-05B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-05C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-05D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-06A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-06B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-06C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-06D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-07A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-07B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-07C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-07D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-08A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-08B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-08C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-08D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-09A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-09B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-09C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-09D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-10A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-10B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-10C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-10D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-11A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-11B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-11C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-11D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-12A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-12B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-12C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-12D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-13A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238159
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238159-13B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-13C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-13D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-14A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-14B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-14C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-14D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)
L2238159-15A	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-15B	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-15C	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16A	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16B	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-16C	Vial HCl preserved	C	NA		3.4	Y	Absent		PA-8260(14)
L2238159-17A	Vial MeOH preserved	C	NA		3.4	Y	Absent		PA-8260HLW(14)
L2238159-17B	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-17C	Vial water preserved	C	NA		3.4	Y	Absent	19-JUL-22 03:02	PA-8260HLW(14)
L2238159-17D	Plastic 120ml unpreserved	C	NA		3.4	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238159
Project Number:	200.00135.006	**Report Date:**	07/25/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238159

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments
38159-01	GPR-799-01-SS01	7/18/22	930	S	ar	☑	
-02	GPR-799-02-SS01		940			☑	
-03	GPR-799-03-SS01		950			☑	
-04	GPR-799-04-SS01		1000			☑	
-05	GPR-799-05-SS01		1010			☑	
-06	GPR-799-06-SS01		1020			☑	
-07	GPR-799-07-SS01		1030			☑	
-08	GPR-798-01-SS01		1040			☑	
-09	GPR-798-02-SS01		1050			☑	
-10	GPR-798-03-SS01		1100			☑	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18/22 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 1800
	7/18/22 2100		7/18/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(A)(I)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238159

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ ADEx

Data Deliverables

☒ EMAIL ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene												Sample Specific Comments
38159-11	GPR-798-04-5501	7/18/22	1110	S	AM	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-12	GPR-798-05-5501		1120			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-13	GPR-798-06-5501		1130			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-14	GPR-798-07-5501		1140			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-15	FB-071822-01		1400	W		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-16	FB-071822-02		1410			☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
-17	DUP-47		—	S		☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Container Type						-	-	G	-	-	-	-	-	-	-	-	-	
Preservative						-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18/22 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 2300
	7/18/22 2100		7/19/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(A)(I)
(rev. 5-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

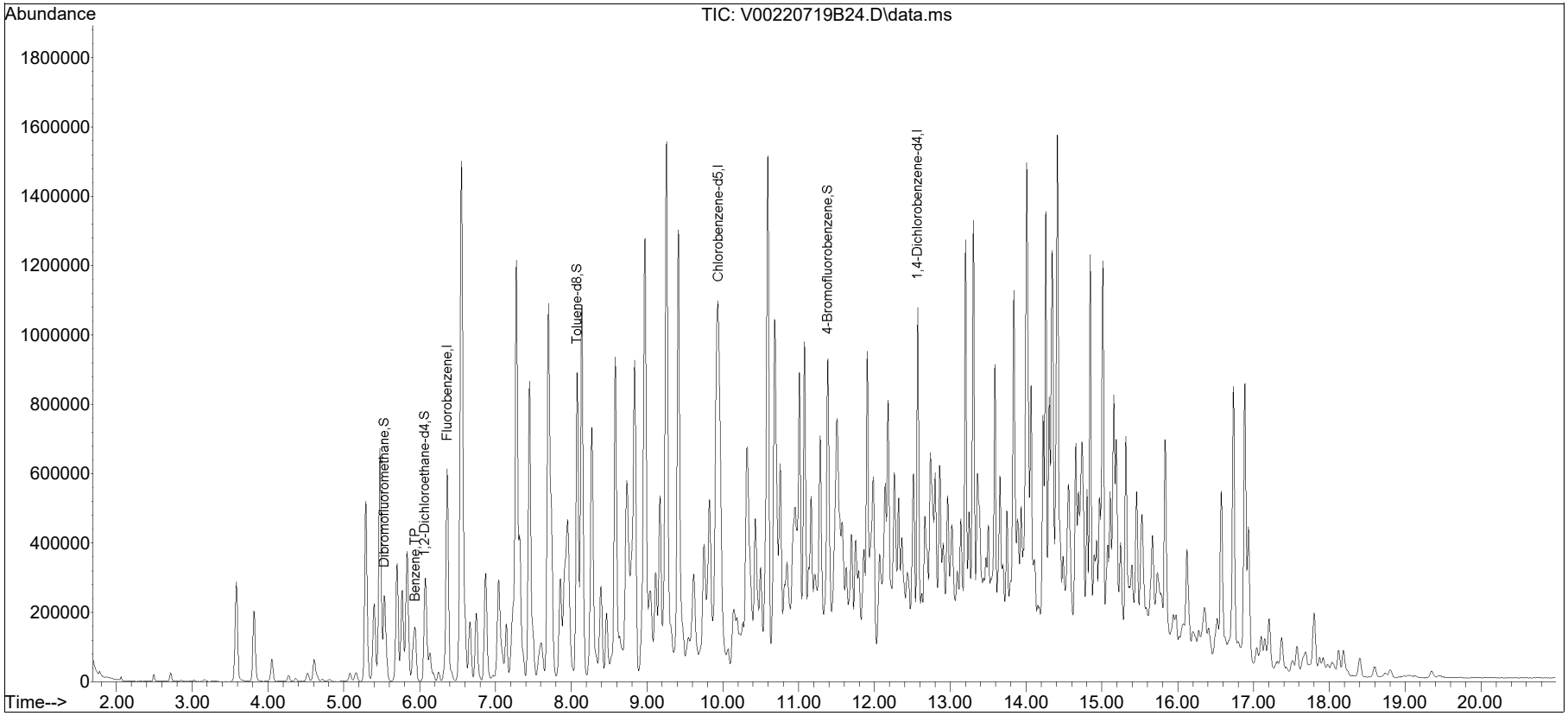
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B24.D
Acq On : 20 Jul 2022 12:07 am
Operator : VOA100:JC
Sample : l2238159-01d,31h,5.67,10,0.02,,a
Misc : WG1665199,ICAL19178
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 20 06:14:53 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



Quantitation Report (QT Reviewed)

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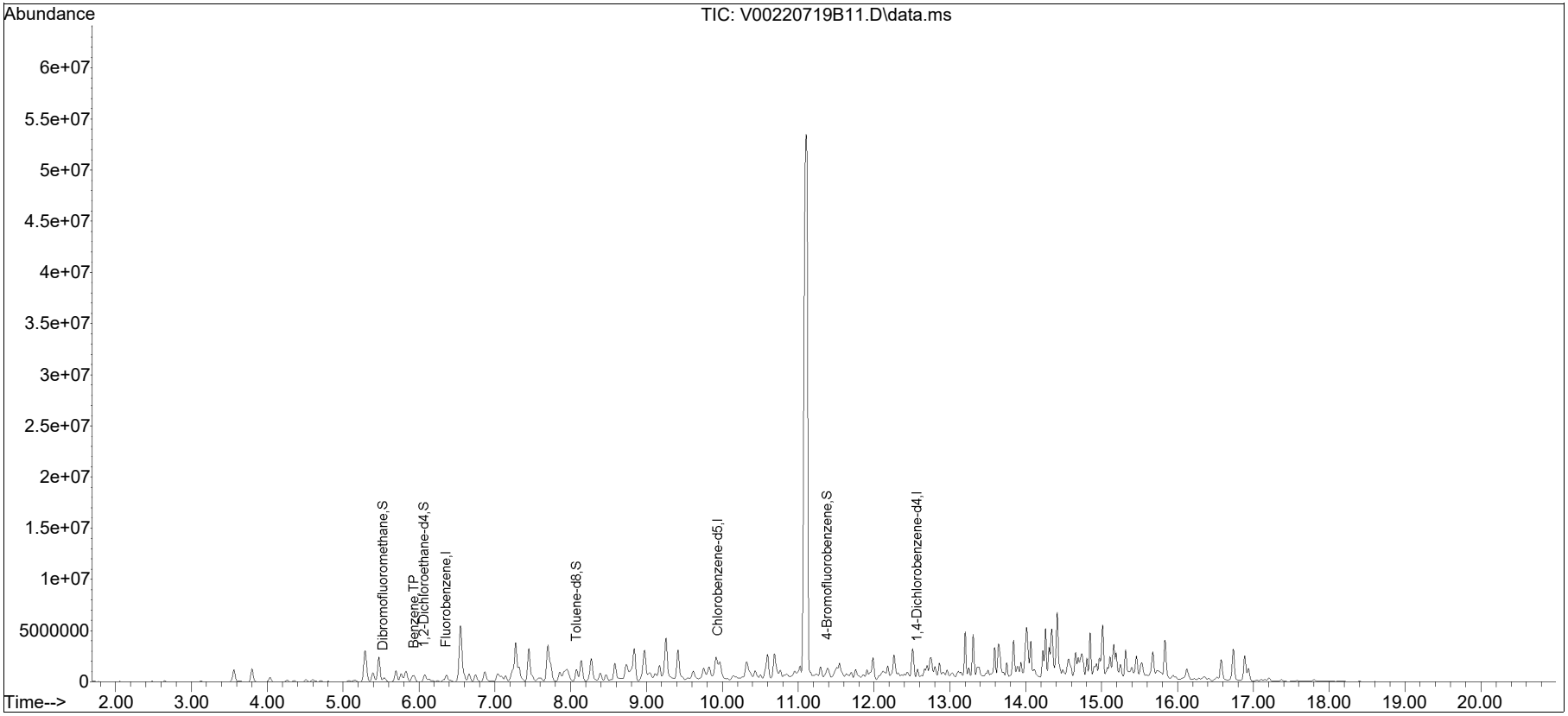
Data File : V00220719B11.D
Acq On : 19 Jul 2022 6:24 pm
Operator : VOA100:JC
Sample : l2238159-02,31h,6.21,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 20 06:14:01 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



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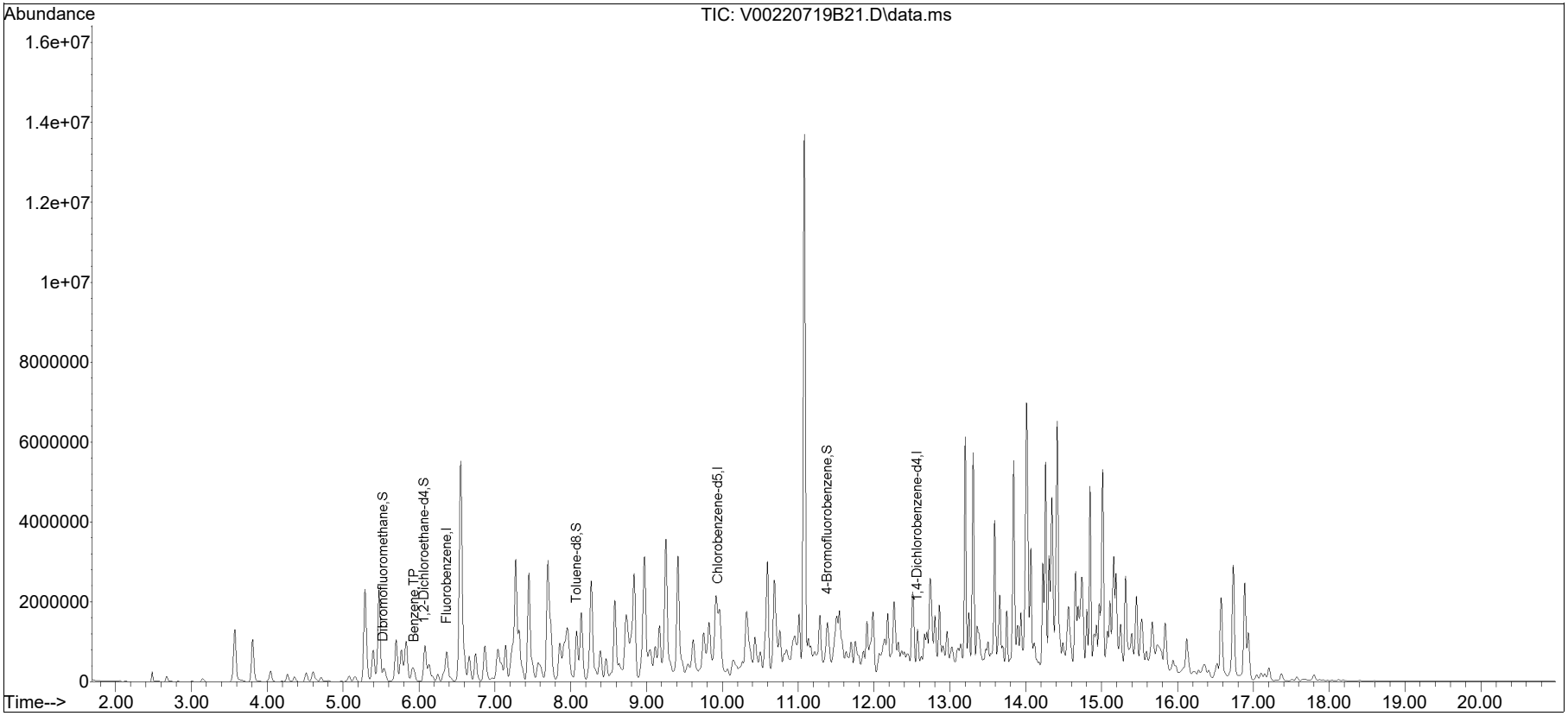
Data File : V00220719B21.D
Acq On : 19 Jul 2022 10:49 pm
Operator : VOA100:JC
Sample : l2238159-07d,31h,6.23,10,0.05,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 20 06:14:41 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



Quantitation Report (QT Reviewed)

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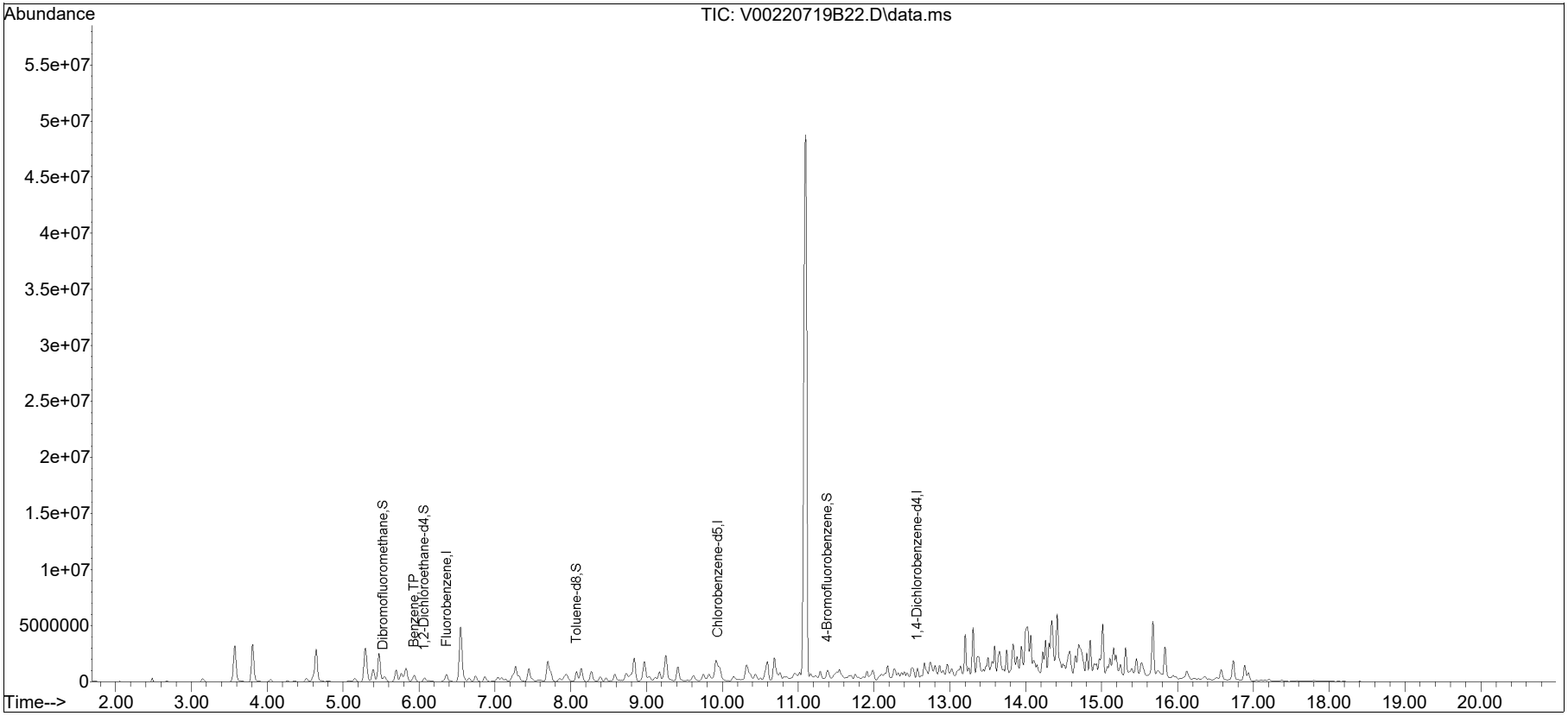
Data File : V00220719B22.D
Acq On : 19 Jul 2022 11:15 pm
Operator : VOA100:JC
Sample : l2238159-08d,31h,5.93,10,0.05,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 20 06:14:45 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



Quantitation Report (QT Reviewed)

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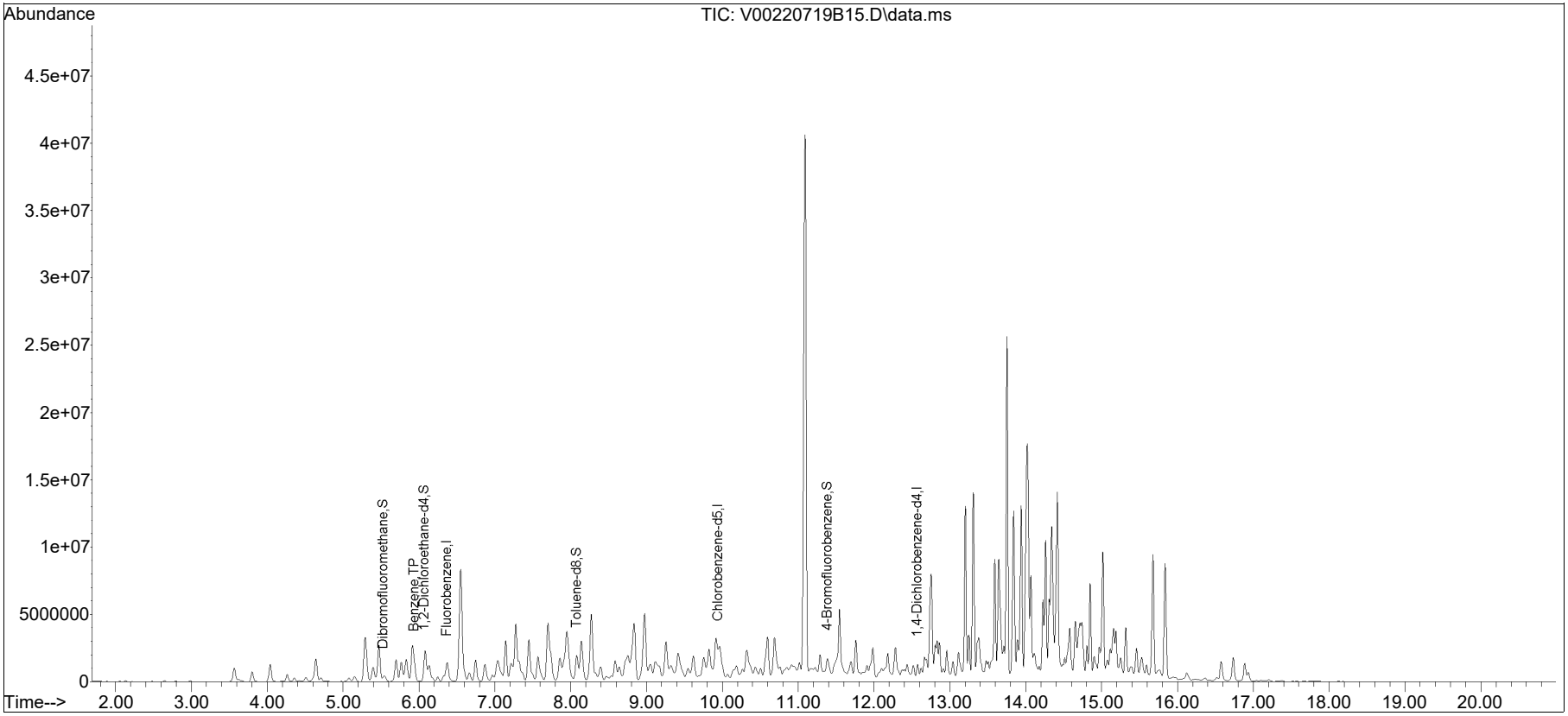
Data File : V00220719B15.D
Acq On : 19 Jul 2022 8:11 pm
Operator : VOA100:JC
Sample : l2238159-09,31h,2.99,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 20 06:14:17 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



Quantitation Report (QT Reviewed)

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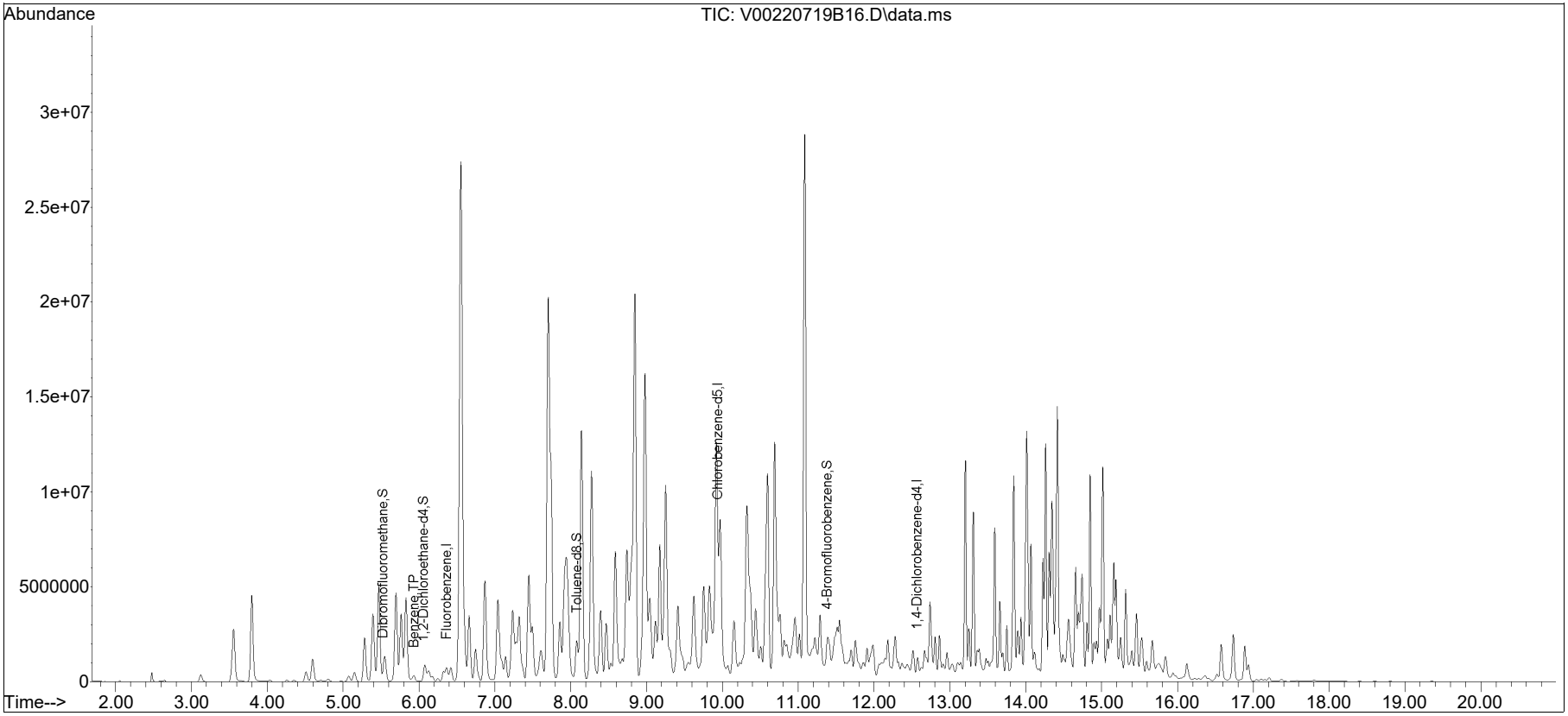
Operator : VOA100:JC
Sample : l2238159-10,31h,6.08,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 20 06:14:21 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•

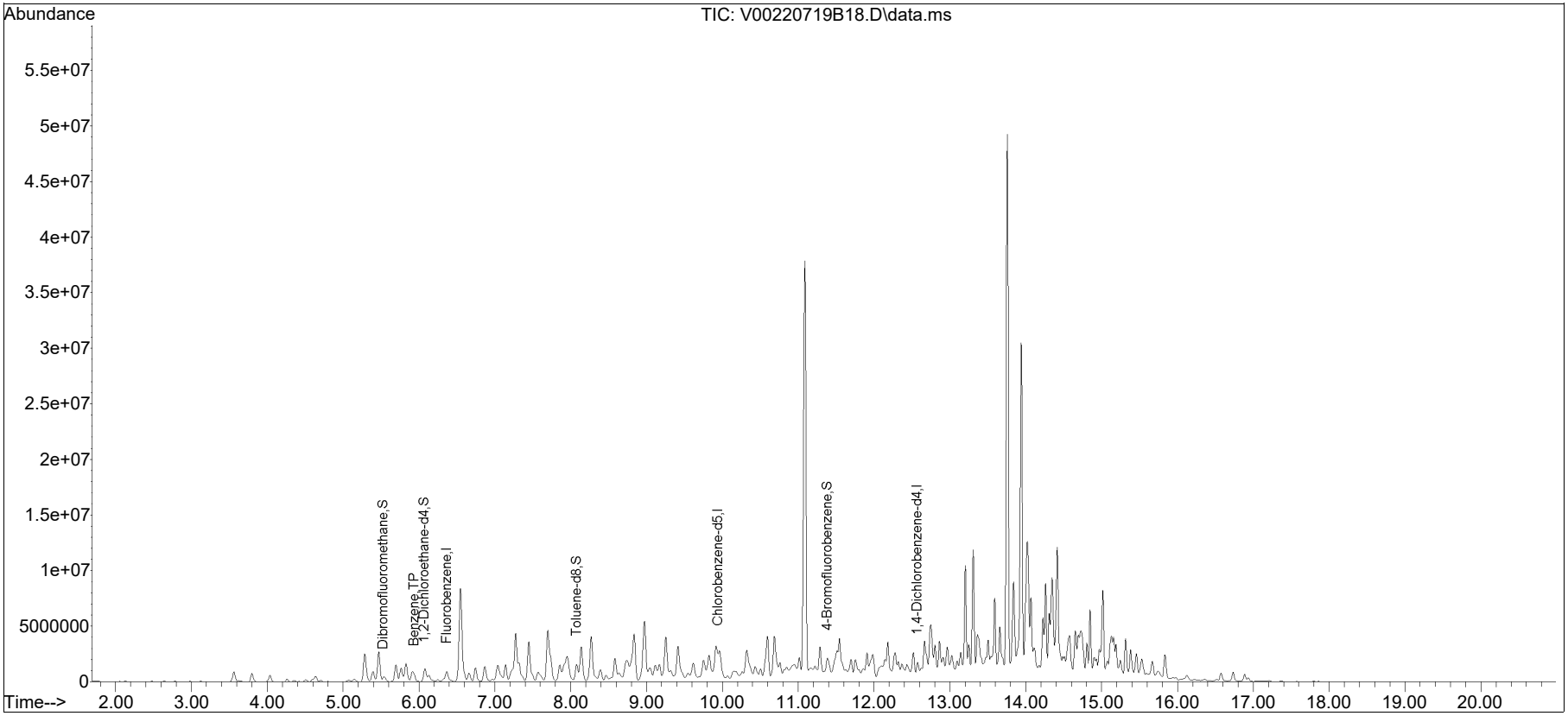


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2022\220719B\
Data File : V00220719B18.D
Acq On : 19 Jul 2022 9:30 pm
Operator : VOA100:JC
Sample : l2238159-12,31h,6.50,10,0.100,,a,r2f
Misc : WG1665199,ICAL19178
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 20 06:14:29 2022
Quant Method : I:\VOLATILES\VOA100\2022\220719B\V100_220714N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Fri Jul 15 08:34:11 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\220719B\V00220719B01.D•



Quantitation Report (QT Reviewed)

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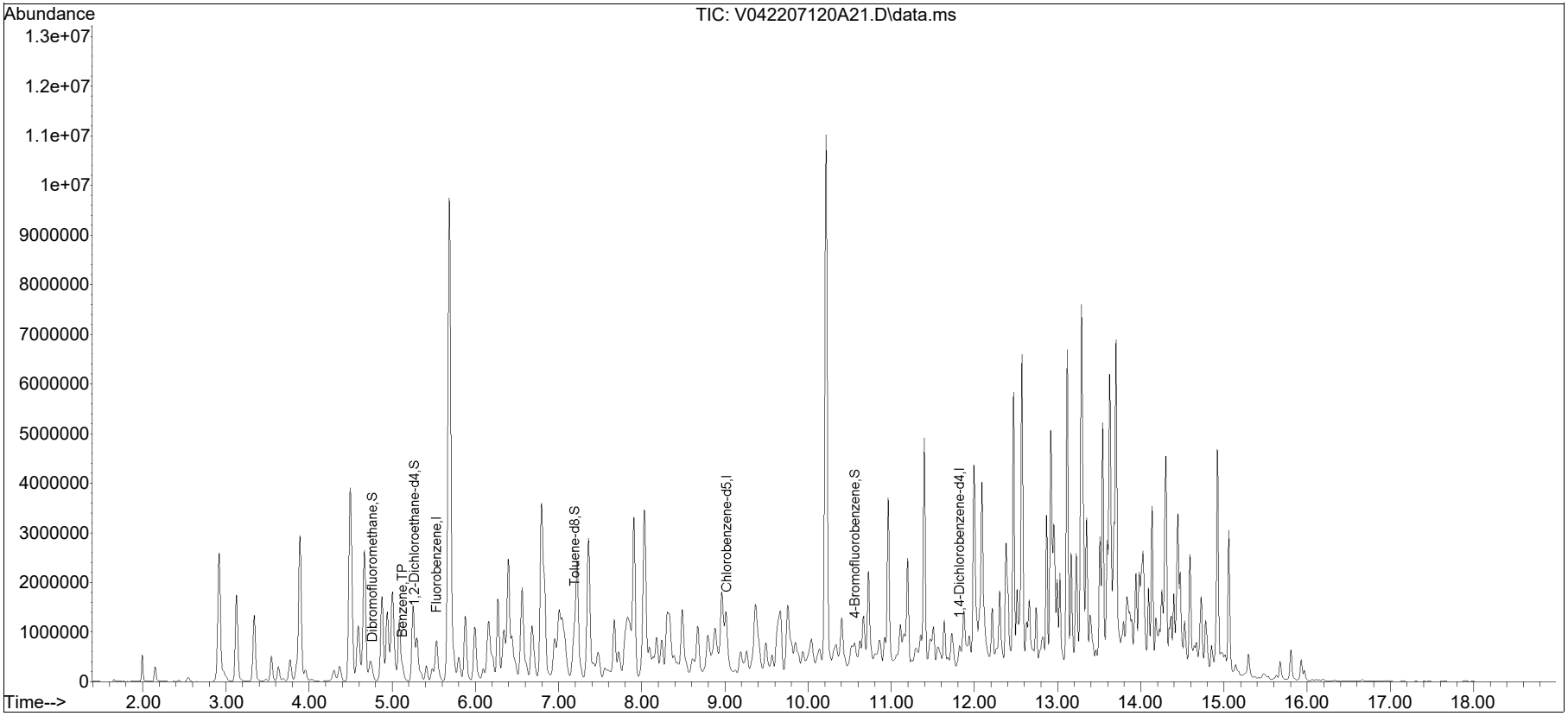
Data File : V042207120A21.D
Acq On : 20 Jul 2022 3:53 pm
Operator : VOA104:JC
Sample : L2238159-13D,31H,5.73,10,0.050,,A
Misc : WG1665578,ICAL19119
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 21 06:56:55 2022
Quant Method : I:\VOLATILES\VOA104\2022\2207120A\V104_220621A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed Jun 22 06:56:43 2022
Response via : Initial Calibration

Sub List : 8260-Benzene - benzene only2\2207120A\V042207120A01.D•



ANALYTICAL REPORT

Lab Number:	L2238160
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	07/25/22

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Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2238160-01	GPR1117-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:00	07/18/22
L2238160-02	GPR1117-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 10:30	07/18/22
L2238160-03	GPR1117-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:00	07/18/22
L2238160-04	GPR1117-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:15	07/18/22
L2238160-05	GPR1117-05-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:30	07/18/22
L2238160-06	GPR1117-06-SS01	SOIL	PHILADELPHIA, PA	07/18/22 11:45	07/18/22
L2238160-07	GPR1117-07-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:00	07/18/22
L2238160-08	GPR1117-08-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:15	07/18/22
L2238160-09	GPR1116-01-SS01	SOIL	PHILADELPHIA, PA	07/18/22 12:30	07/18/22
L2238160-10	GPR1116-02-SS01	SOIL	PHILADELPHIA, PA	07/18/22 13:00	07/18/22
L2238160-11	GPR1116-03-SS01	SOIL	PHILADELPHIA, PA	07/18/22 13:30	07/18/22
L2238160-12	GPR1116-04-SS01	SOIL	PHILADELPHIA, PA	07/18/22 14:00	07/18/22
L2238160-13	FB-071822-3	WATER	PHILADELPHIA, PA	07/18/22 14:10	07/18/22
L2238160-14	FB-071822-4	WATER	PHILADELPHIA, PA	07/18/22 14:20	07/18/22
L2238160-15	TB-071822	WATER	PHILADELPHIA, PA	07/18/22 00:00	07/18/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2238160
Project Number: 200.00135.006 **Report Date:** 07/25/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2238160-15: A sample identified as "TB-071822" was listed on the Chain of Custody, but not received. This was verified by the client.

Volatile Organics

L2238160-04D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

L2238160-04D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (216%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (1300%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (194%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2238160-11: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (318%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Total Metals

L2238160-01-03: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 07/25/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 02:08
Analyst: JC
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00087	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00045	1
Toluene	ND		mg/kg	0.0017	0.00094	1
1,2-Dibromoethane	ND		mg/kg	0.00087	0.00051	1
Ethylbenzene	ND		mg/kg	0.0017	0.00024	1
p/m-Xylene	ND		mg/kg	0.0035	0.00098	1
o-Xylene	0.0014	J	mg/kg	0.0017	0.00051	1
Xylenes, Total	0.0014	J	mg/kg	0.0017	0.00051	1
Isopropylbenzene	0.0055		mg/kg	0.0017	0.00019	1
1,3,5-Trimethylbenzene	0.0016	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.0023	J	mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 02:36
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0033	0.00033	1
Benzene	ND		mg/kg	0.00083	0.00028	1
1,2-Dichloroethane	ND		mg/kg	0.0017	0.00043	1
Toluene	ND		mg/kg	0.0017	0.00090	1
1,2-Dibromoethane	ND		mg/kg	0.00083	0.00049	1
Ethylbenzene	ND		mg/kg	0.0017	0.00023	1
p/m-Xylene	ND		mg/kg	0.0033	0.00093	1
o-Xylene	0.00098	J	mg/kg	0.0017	0.00048	1
Xylenes, Total	0.00098	J	mg/kg	0.0017	0.00048	1
Isopropylbenzene	0.0010	J	mg/kg	0.0017	0.00018	1
1,3,5-Trimethylbenzene	0.0015	J	mg/kg	0.0033	0.00032	1
1,2,4-Trimethylbenzene	0.0017	J	mg/kg	0.0033	0.00055	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 03:04
Analyst: JC
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00029	1
Benzene	0.00024	J	mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00048	J	mg/kg	0.0014	0.00042	1
Xylenes, Total	0.00048	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.00049	J	mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00028	1
1,2,4-Trimethylbenzene	0.00085	J	mg/kg	0.0028	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04 D
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 07:19
Analyst: JC
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.1	0.11	2
Benzene	0.11	J	mg/kg	0.28	0.093	2
1,2-Dichloroethane	ND		mg/kg	0.56	0.14	2
Toluene	0.34	J	mg/kg	0.56	0.30	2
1,2-Dibromoethane	ND		mg/kg	0.28	0.16	2
Ethylbenzene	0.23	J	mg/kg	0.56	0.079	2
p/m-Xylene	0.92	J	mg/kg	1.1	0.31	2
o-Xylene	0.20	J	mg/kg	0.56	0.16	2
Xylenes, Total	1.1	J	mg/kg	0.56	0.16	2
Isopropylbenzene	3.7		mg/kg	0.56	0.061	2
1,3,5-Trimethylbenzene	0.41	J	mg/kg	1.1	0.11	2
1,2,4-Trimethylbenzene	1.3		mg/kg	1.1	0.19	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**216**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 03:33
Analyst: JC
Percent Solids: 44%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0044	0.00045	1
Benzene	0.0011		mg/kg	0.0011	0.00037	1
1,2-Dichloroethane	ND		mg/kg	0.0022	0.00057	1
Toluene	ND		mg/kg	0.0022	0.0012	1
1,2-Dibromoethane	ND		mg/kg	0.0011	0.00065	1
Ethylbenzene	ND		mg/kg	0.0022	0.00031	1
p/m-Xylene	ND		mg/kg	0.0044	0.0012	1
o-Xylene	ND		mg/kg	0.0022	0.00064	1
Xylenes, Total	ND		mg/kg	0.0022	0.00064	1
Isopropylbenzene	ND		mg/kg	0.0022	0.00024	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0044	0.00043	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0044	0.00074	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:01
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0038	0.00038	1
Benzene	0.0012		mg/kg	0.00094	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	0.0020		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00094	0.00055	1
Ethylbenzene	ND		mg/kg	0.0019	0.00026	1
p/m-Xylene	0.0036	J	mg/kg	0.0038	0.0010	1
o-Xylene	0.0012	J	mg/kg	0.0019	0.00055	1
Xylenes, Total	0.0048	J	mg/kg	0.0019	0.00055	1
Isopropylbenzene	0.0012	J	mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	0.0025	J	mg/kg	0.0038	0.00036	1
1,2,4-Trimethylbenzene	0.0090		mg/kg	0.0038	0.00063	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**1300**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:29
Analyst: JC
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0039	0.00039	1
Benzene	0.00049	J	mg/kg	0.00097	0.00032	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00050	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00097	0.00057	1
Ethylbenzene	ND		mg/kg	0.0019	0.00027	1
p/m-Xylene	ND		mg/kg	0.0039	0.0011	1
o-Xylene	ND		mg/kg	0.0019	0.00056	1
Xylenes, Total	ND		mg/kg	0.0019	0.00056	1
Isopropylbenzene	ND		mg/kg	0.0019	0.00021	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0039	0.00037	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0039	0.00064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 04:57
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0054		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	ND		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	ND		mg/kg	0.0024	0.00066	1
o-Xylene	ND		mg/kg	0.0012	0.00034	1
Xylenes, Total	ND		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.00028	J	mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0024	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 05:54
Analyst: JC
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	ND		mg/kg	0.00073	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0015	0.00038	1
Toluene	0.00081	J	mg/kg	0.0015	0.00080	1
1,2-Dibromoethane	ND		mg/kg	0.00073	0.00043	1
Ethylbenzene	0.0012	J	mg/kg	0.0015	0.00021	1
p/m-Xylene	0.030		mg/kg	0.0029	0.00082	1
o-Xylene	0.012		mg/kg	0.0015	0.00043	1
Xylenes, Total	0.042		mg/kg	0.0015	0.00043	1
Isopropylbenzene	0.028		mg/kg	0.0015	0.00016	1
1,3,5-Trimethylbenzene	0.016		mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.026		mg/kg	0.0029	0.00049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	123		70-130
4-Bromofluorobenzene	**194**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 06:22
Analyst: JC
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.017		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	0.020		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	0.0031		mg/kg	0.0018	0.00026	1
p/m-Xylene	0.016		mg/kg	0.0037	0.0010	1
o-Xylene	0.0055		mg/kg	0.0018	0.00054	1
Xylenes, Total	0.022		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.0091		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.00097	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.029		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 06:51
Analyst: JC
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0029	0.00029	1
Benzene	0.0012		mg/kg	0.00072	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00037	1
Toluene	0.00080	J	mg/kg	0.0014	0.00078	1
1,2-Dibromoethane	ND		mg/kg	0.00072	0.00042	1
Ethylbenzene	0.00040	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	0.00085	J	mg/kg	0.0029	0.00080	1
o-Xylene	0.0031		mg/kg	0.0014	0.00042	1
Xylenes, Total	0.0040	J	mg/kg	0.0014	0.00042	1
Isopropylbenzene	0.015		mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	0.00056	J	mg/kg	0.0029	0.00028	1
1,2,4-Trimethylbenzene	0.0095		mg/kg	0.0029	0.00048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**318**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/20/22 05:25
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0023	0.00024	1
Benzene	0.00056	J	mg/kg	0.00059	0.00019	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0017		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00034	1
Ethylbenzene	0.0010	J	mg/kg	0.0012	0.00016	1
p/m-Xylene	0.0082		mg/kg	0.0023	0.00066	1
o-Xylene	0.0068		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.015		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.024		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0089		mg/kg	0.0023	0.00023	1
1,2,4-Trimethylbenzene	0.022		mg/kg	0.0023	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 12:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	110		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/20/22 13:13
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	109		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-15
Client ID: TB-071822
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 00:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 07/20/22 16:30
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 07/20/22 14:35
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 07/20/22 13:30

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 13-15 Batch: WG1664686-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:46
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,05-12 Batch: WG1665206-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/22 23:46
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1665207-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/20/22 08:29
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-14 Batch: WG1665431-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 13-15 Batch: WG1664686-2								
1,2-Dibromoethane	93		-		80-120	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,05-12 Batch: WG1665206-3 WG1665206-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	107		106		70-130	1		30
1,2-Dichloroethane	98		98		70-130	0		30
Toluene	105		105		70-130	0		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	104		104		70-130	0		30
p/m-Xylene	105		105		70-130	0		30
o-Xylene	105		104		70-130	1		30
Isopropylbenzene	108		108		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		105		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	106		105		70-130
Dibromofluoromethane	91		91		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1665207-3 WG1665207-4								
Methyl tert butyl ether	116		115		66-130	1		30
Benzene	107		106		70-130	1		30
1,2-Dichloroethane	98		98		70-130	0		30
Toluene	105		105		70-130	0		30
1,2-Dibromoethane	104		104		70-130	0		30
Ethylbenzene	104		104		70-130	0		30
p/m-Xylene	105		105		70-130	0		30
o-Xylene	105		104		70-130	1		30
Isopropylbenzene	108		108		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		105		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	106		104		70-130
Dibromofluoromethane	91		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-14 Batch: WG1665431-3 WG1665431-4								
Methyl tert butyl ether	100		110		63-130	10		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	98		95		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 06:49
Analyst: SLR
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.28	0.034	1
Fluorene	0.26	J	mg/kg	0.28	0.027	1
Phenanthrene	0.86		mg/kg	0.17	0.034	1
Anthracene	0.22		mg/kg	0.17	0.054	1
Pyrene	1.2		mg/kg	0.17	0.028	1
Benzo(a)anthracene	0.72		mg/kg	0.17	0.031	1
Chrysene	0.79		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	0.97		mg/kg	0.17	0.047	1
Benzo(a)pyrene	1.0		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	0.50		mg/kg	0.22	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	39		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 05:15
Analyst: SLR
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.24	0.030	1
Fluorene	0.27		mg/kg	0.24	0.024	1
Phenanthrene	0.80		mg/kg	0.14	0.029	1
Anthracene	0.29		mg/kg	0.14	0.047	1
Pyrene	1.5		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.76		mg/kg	0.14	0.027	1
Chrysene	0.88		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	1.0		mg/kg	0.14	0.041	1
Benzo(a)pyrene	1.1		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.58		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	114		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	59		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 03:18
Analyst: SLR
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.3		mg/kg	0.24	0.029	1
Fluorene	2.7		mg/kg	0.24	0.023	1
Phenanthrene	8.9		mg/kg	0.14	0.029	1
Anthracene	1.4		mg/kg	0.14	0.046	1
Pyrene	3.2		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.88		mg/kg	0.14	0.027	1
Chrysene	1.0		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.79		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.84		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.41		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	54		30-120
4-Terphenyl-d14	53		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 07:35
Analyst: SLR
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.20	0.025	1
Fluorene	1.0		mg/kg	0.20	0.020	1
Phenanthrene	3.5		mg/kg	0.12	0.025	1
Anthracene	0.96		mg/kg	0.12	0.040	1
Pyrene	4.8		mg/kg	0.12	0.020	1
Benzo(a)anthracene	2.9		mg/kg	0.12	0.023	1
Chrysene	2.8		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	3.4		mg/kg	0.12	0.035	1
Benzo(a)pyrene	3.1		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	1.6		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**360**	Q	23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:28
Analyst: SLR
Percent Solids: 44%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32	J	mg/kg	0.37	0.045	1
Fluorene	0.19	J	mg/kg	0.37	0.036	1
Phenanthrene	1.2		mg/kg	0.22	0.045	1
Anthracene	0.54		mg/kg	0.22	0.072	1
Pyrene	1.1		mg/kg	0.22	0.037	1
Benzo(a)anthracene	0.67		mg/kg	0.22	0.042	1
Chrysene	0.66		mg/kg	0.22	0.039	1
Benzo(b)fluoranthene	0.75		mg/kg	0.22	0.062	1
Benzo(a)pyrene	0.64		mg/kg	0.30	0.091	1
Benzo(ghi)perylene	0.36		mg/kg	0.30	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**125**	Q	23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:52
Analyst: SLR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.2		mg/kg	0.24	0.029	1
Fluorene	0.12	J	mg/kg	0.24	0.023	1
Phenanthrene	0.52		mg/kg	0.14	0.029	1
Anthracene	0.22		mg/kg	0.14	0.047	1
Pyrene	0.76		mg/kg	0.14	0.024	1
Benzo(a)anthracene	0.53		mg/kg	0.14	0.027	1
Chrysene	0.74		mg/kg	0.14	0.025	1
Benzo(b)fluoranthene	0.76		mg/kg	0.14	0.041	1
Benzo(a)pyrene	0.72		mg/kg	0.19	0.059	1
Benzo(ghi)perylene	0.49		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	48		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 06:02
Analyst: SLR
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.45		mg/kg	0.28	0.034	1
Fluorene	0.11	J	mg/kg	0.28	0.027	1
Phenanthrene	0.39		mg/kg	0.17	0.034	1
Anthracene	0.098	J	mg/kg	0.17	0.054	1
Pyrene	0.39		mg/kg	0.17	0.028	1
Benzo(a)anthracene	0.26		mg/kg	0.17	0.031	1
Chrysene	0.27		mg/kg	0.17	0.029	1
Benzo(b)fluoranthene	0.36		mg/kg	0.17	0.047	1
Benzo(a)pyrene	0.30		mg/kg	0.22	0.068	1
Benzo(ghi)perylene	0.20	J	mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	30		30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 08:23
Analyst: SLR
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.14	J	mg/kg	0.21	0.026	1
Fluorene	0.12	J	mg/kg	0.21	0.021	1
Phenanthrene	1.1		mg/kg	0.13	0.026	1
Anthracene	0.30		mg/kg	0.13	0.042	1
Pyrene	1.0		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.59		mg/kg	0.13	0.024	1
Chrysene	0.58		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.61		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.54		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.26		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	31		30-120
4-Terphenyl-d14	31		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 03:41
Analyst: SLR
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.94		mg/kg	0.24	0.030	1
Fluorene	0.11	J	mg/kg	0.24	0.024	1
Phenanthrene	0.32		mg/kg	0.15	0.030	1
Anthracene	0.14	J	mg/kg	0.15	0.048	1
Pyrene	0.49		mg/kg	0.15	0.024	1
Benzo(a)anthracene	0.38		mg/kg	0.15	0.027	1
Chrysene	0.42		mg/kg	0.15	0.025	1
Benzo(b)fluoranthene	0.57		mg/kg	0.15	0.041	1
Benzo(a)pyrene	0.58		mg/kg	0.20	0.060	1
Benzo(ghi)perylene	0.33		mg/kg	0.20	0.029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	**28**	Q	30-120
4-Terphenyl-d14	27		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 04:05
Analyst: SLR
Percent Solids: 54%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.0		mg/kg	0.30	0.037	1
Fluorene	0.35		mg/kg	0.30	0.030	1
Phenanthrene	0.94		mg/kg	0.18	0.037	1
Anthracene	0.34		mg/kg	0.18	0.059	1
Pyrene	1.2		mg/kg	0.18	0.030	1
Benzo(a)anthracene	0.81		mg/kg	0.18	0.034	1
Chrysene	0.92		mg/kg	0.18	0.032	1
Benzo(b)fluoranthene	1.1		mg/kg	0.18	0.051	1
Benzo(a)pyrene	1.2		mg/kg	0.24	0.074	1
Benzo(ghi)perylene	0.54		mg/kg	0.24	0.036	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	**29**	Q	30-120
4-Terphenyl-d14	26		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 10:21
Analyst: SLR
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.52		mg/kg	0.24	0.029	1
Fluorene	0.75		mg/kg	0.24	0.023	1
Phenanthrene	1.5		mg/kg	0.14	0.029	1
Anthracene	0.30		mg/kg	0.14	0.046	1
Pyrene	0.68		mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.39		mg/kg	0.14	0.026	1
Chrysene	0.77		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.49		mg/kg	0.14	0.040	1
Benzo(a)pyrene	0.42		mg/kg	0.19	0.058	1
Benzo(ghi)perylene	0.22		mg/kg	0.19	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	**29**	Q	30-120
4-Terphenyl-d14	28		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/22 18:55
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.8		mg/kg	0.20	0.024	1
Fluorene	0.16	J	mg/kg	0.20	0.019	1
Phenanthrene	0.52		mg/kg	0.12	0.024	1
Anthracene	0.28		mg/kg	0.12	0.038	1
Pyrene	0.54		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.49		mg/kg	0.12	0.022	1
Chrysene	0.52		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.67		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.66		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.52		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	34		23-120
2-Fluorobiphenyl	36		30-120
4-Terphenyl-d14	30		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 11:19
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	36		23-120
2-Fluorobiphenyl	38		15-120
4-Terphenyl-d14	**38**	Q	41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA

Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 11:35
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	40		15-120
4-Terphenyl-d14	**39**	Q	41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/22 23:24
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 07/19/22 13:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1664828-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.099	0.020
Anthracene	ND		mg/kg	0.099	0.032
Pyrene	ND		mg/kg	0.099	0.016
Benzo(a)anthracene	ND		mg/kg	0.099	0.019
Chrysene	ND		mg/kg	0.099	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.099	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	112		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/22 10:15
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 07/20/22 05:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-14 Batch: WG1665023-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	33		23-120
2-Fluorobiphenyl	35		15-120
4-Terphenyl-d14	**34**	Q	41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1664828-2 WG1664828-3								
Naphthalene	51		63		40-140	21		50
Fluorene	50		64		40-140	25		50
Phenanthrene	50		63		40-140	23		50
Anthracene	51		66		40-140	26		50
Pyrene	49		63		35-142	25		50
Benzo(a)anthracene	50		64		40-140	25		50
Chrysene	51		64		40-140	23		50
Benzo(b)fluoranthene	48		63		40-140	27		50
Benzo(a)pyrene	50		65		40-140	26		50
Benzo(ghi)perylene	46		60		40-140	26		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80		102		23-120
2-Fluorobiphenyl	46		57		30-120
4-Terphenyl-d14	47		60		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-14 Batch: WG1665023-2 WG1665023-3								
Naphthalene	73		65		40-140	12		40
Fluorene	71		65		40-140	9		40
Phenanthrene	73		67		40-140	9		40
Anthracene	71		66		40-140	7		40
Pyrene	68		65		26-127	5		40
Benzo(a)anthracene	70		65		40-140	7		40
Chrysene	74		69		40-140	7		40
Benzo(b)fluoranthene	74		70		40-140	6		40
Benzo(a)pyrene	73		69		40-140	6		40
Benzo(ghi)perylene	82		82		40-140	0		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	36		32		23-120
2-Fluorobiphenyl	37		33		15-120
4-Terphenyl-d14	**36**	Q	**35**	Q	41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 59%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	157		mg/kg	6.55	0.351	2	07/19/22 09:10	07/20/22 16:06	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	125		mg/kg	5.59	0.300	2	07/19/22 09:10	07/20/22 16:11	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	133		mg/kg	5.80	0.311	2	07/19/22 09:10	07/20/22 16:15	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	66.9		mg/kg	2.44	0.130	1	07/19/22 09:10	07/20/22 14:04	EPA 3050B	1,6010D	SB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 44%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	619		mg/kg	4.42	0.237	1	07/19/22 09:10	07/20/22 14:09	EPA 3050B	1,6010D	SB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	687		mg/kg	2.85	0.153	1	07/19/22 09:10	07/20/22 14:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	981		mg/kg	3.24	0.173	1	07/19/22 09:10	07/20/22 14:18	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.4		mg/kg	2.46	0.132	1	07/19/22 09:10	07/20/22 14:55	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.4		mg/kg	2.87	0.154	1	07/19/22 09:10	07/20/22 14:59	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	97.8		mg/kg	3.52	0.189	1	07/19/22 09:10	07/20/22 15:04	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1360		mg/kg	2.83	0.152	1	07/19/22 09:10	07/20/22 15:09	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	20.2		mg/kg	2.31	0.124	1	07/19/22 09:10	07/20/22 15:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-13
Client ID: FB-071822-3
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 20:23	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2238160
Project Number: 200.00135.006
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-14
Client ID: FB-071822-4
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 14:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 20:28	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-12 Batch: WG1664552-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	07/19/22 09:10	07/20/22 09:38	1,6010D	SB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 13-14 Batch: WG1664652-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	07/19/22 10:34	07/19/22 19:15	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 Batch: WG1664552-2 SRM Lot Number: D113-540								
Lead, Total	90		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 13-14 Batch: WG1664652-2								
Lead, Total	96		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1664552-3 QC Sample: L2238152-01 Client ID: MS Sample												
Lead, Total	16.8	45.6	41.9	**55**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1664652-3 WG1664652-4 QC Sample: L2238192-01 Client ID: MS Sample												
Lead, Total	10.88	530	549.9	102		505.6	93		75-125	8		20
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1664652-7 WG1664652-8 QC Sample: L2238192-03 Client ID: MS Sample												
Lead, Total	ND	530	506.0	95		507.2	96		75-125	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1664552-4 QC Sample: L2238152-01 Client ID: DUP Sample						
Lead, Total	16.8	12.3	mg/kg	**31**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-01
Client ID: GPR1117-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	58.7		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-02
Client ID: GPR1117-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 10:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-03
Client ID: GPR1117-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-04
Client ID: GPR1117-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:15
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.9		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-05
Client ID: GPR1117-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:30
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	43.5		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-06
Client ID: GPR1117-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 11:45
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	68.5		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-07
Client ID: GPR1117-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 12:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-08
Client ID: GPR1117-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 12:15
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.1		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-09
Client ID: GPR1116-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 12:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.4		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-10
Client ID: GPR1116-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.9		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-11
Client ID: GPR1116-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 07/18/22 13:30
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.3		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2238160
Report Date: 07/25/22

SAMPLE RESULTS

Lab ID: L2238160-12
Client ID: GPR1116-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 14:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.2		%	0.100	NA	1	-	07/19/22 10:10	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2238160

Report Date: 07/25/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1664529-1 QC Sample: L2238160-01 Client ID: GPR1117-01-SS01						
Solids, Total	58.7	62.1	%	6		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-01A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-01B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-01C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-01D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-01F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-02A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-02B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-02C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-02D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-02F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-03A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)
L2238160-03B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-03C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-03D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-03E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-03F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-04A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-04B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-04C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-04D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-04F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-05A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-05B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-05C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-05D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-05F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-06A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-06B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-06C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-06D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-06F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-07A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-07B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-07C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-07D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-07F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-08A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-08B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-08C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-08D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-08F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-09A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-09B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-09C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-09D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-09F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-10A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-10B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-10C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-10D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-10F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-11A	Vial MeOH preserved	B	NA		4.9	Y	Absent		PA-8260HLW(14)
L2238160-11B	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-11C	Vial water preserved	B	NA		4.9	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-11D	Plastic 120ml unpreserved	B	NA		4.9	Y	Absent		TS(7)
L2238160-11E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.9	Y	Absent		PB-TI(180)
L2238160-11F	Glass 120ml/4oz unpreserved	B	NA		4.9	Y	Absent		PA-PAH(14)
L2238160-12A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2238160-12B	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-12C	Vial water preserved	A	NA		3.5	Y	Absent	19-JUL-22 03:12	PA-8260HLW(14)
L2238160-12D	Plastic 120ml unpreserved	A	NA		3.5	Y	Absent		TS(7)
L2238160-12E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		PB-TI(180)
L2238160-12F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		PA-PAH(14)
L2238160-13A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2238160-13D	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)
L2238160-13E	Vial Na2S2O3 preserved	A	NA		3.5	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2238160
Report Date: 07/25/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238160-13F	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		PB-6020T-PPB(180)
L2238160-13G	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-13H	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-14A	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14B	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14C	Vial HCl preserved	B	NA		4.9	Y	Absent		PA-8260(14)
L2238160-14D	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-14E	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-14F	Plastic 250ml HNO3 preserved	B	<2	<2	4.9	Y	Absent		PB-6020T-PPB(180)
L2238160-14G	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-14H	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		PA-PAHSIM-LVI(7)
L2238160-15A	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)
L2238160-15B	Vial Na2S2O3 preserved	B	NA		4.9	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2238160
Project Number:	200.00135.006	**Report Date:**	07/25/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

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Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238160

ALPHA ANALYTICAL

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Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORTLIST 1-5

SAMPLE HANDLING

Filtration

☐ Done ☒ Not Needed ☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
38160-01	GPR1117-01-5501	7/18	1000	TS ↔ S		
02	GPR1117-02-5501		1030			
03	GPR1117-03-5501		1100			
04	GPR1117-04-5501		1115			
05	GPR1117-05-5501		1130			
06	GPR1117-06-5501		1145			
07	GPR1117-07-5501		1200			
08	GPR1117-08-5501		1215			
09	GPR1116-01-5501		1230			
10	GPR1116-02-5501		1300			

Container Type: G

Preservative:

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18 14:58		7/18/22 14:58
	7/18/22 1800		7/18/22 2100
	7/18/22 2100		7/18/22 2350

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238160

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORTLIST 1-5 | VOC PORTION OF SCL 1-5 | EDB (8011)

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SHORTLIST 1-5	VOC PORTION OF SCL 1-5	EDB (8011)	Sample Specific Comments
38160-11	GPR1116-030501	7/18	1330	S	TS	☑	☐	☐	
12	GPR1116-040501		1400	S	TS	☑	☐	☐	
13	FB-071822-3		1410	W		☑	☐	☐	
14	FB-071822-4		1420	W		☑	☐	☐	
15	TB-071822		-	W		☐	☐	☐	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/18 14:58		7/18/22 14:58
	7/18/22 18:00		7/18 1800
	7/18/22 21:00		7/18/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(rev.8)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

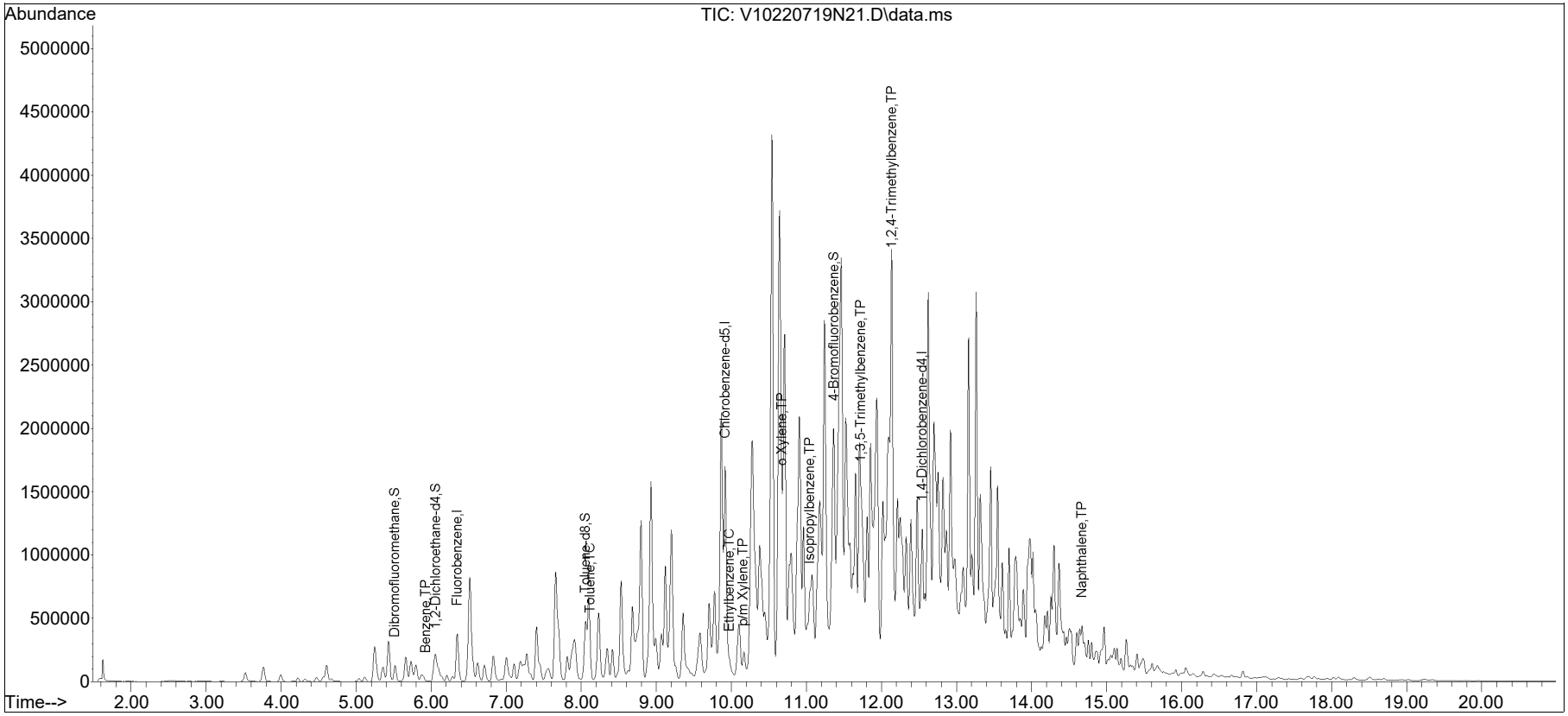
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N21.D
Acq On : 20 Jul 2022 7:19 am
Operator : VOA110:JC
Sample : l2238160-04d,31h,1.19,5,0.05,,a,r2f
Misc : WG1665207,ICAL18890
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 20 07:46:26 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\\V10220719N01.D•

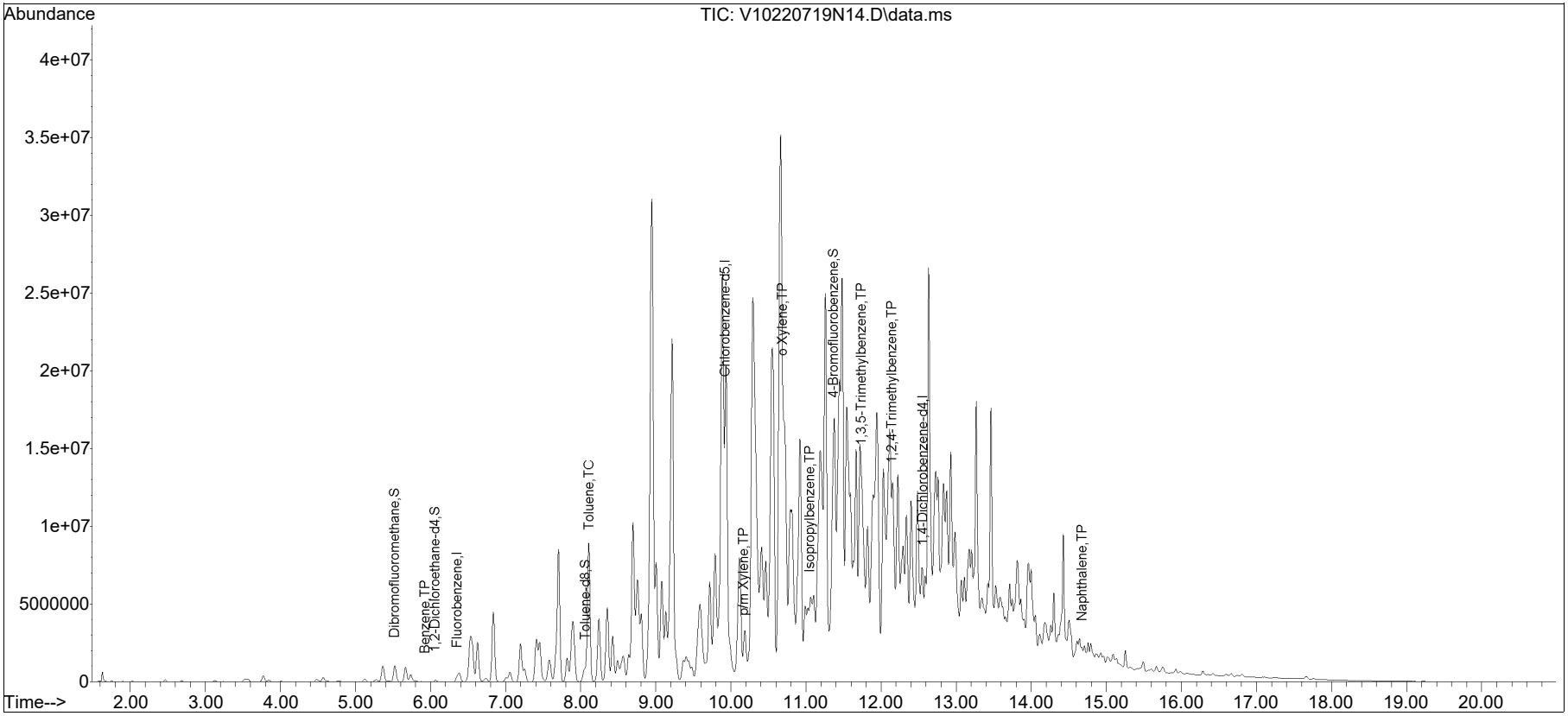


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N14.D
Acq On : 20 Jul 2022 4:01 am
Operator : VOA110:JC
Sample : l2238160-06,31,3.87,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 20 07:26:44 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\V10220719N02.D•

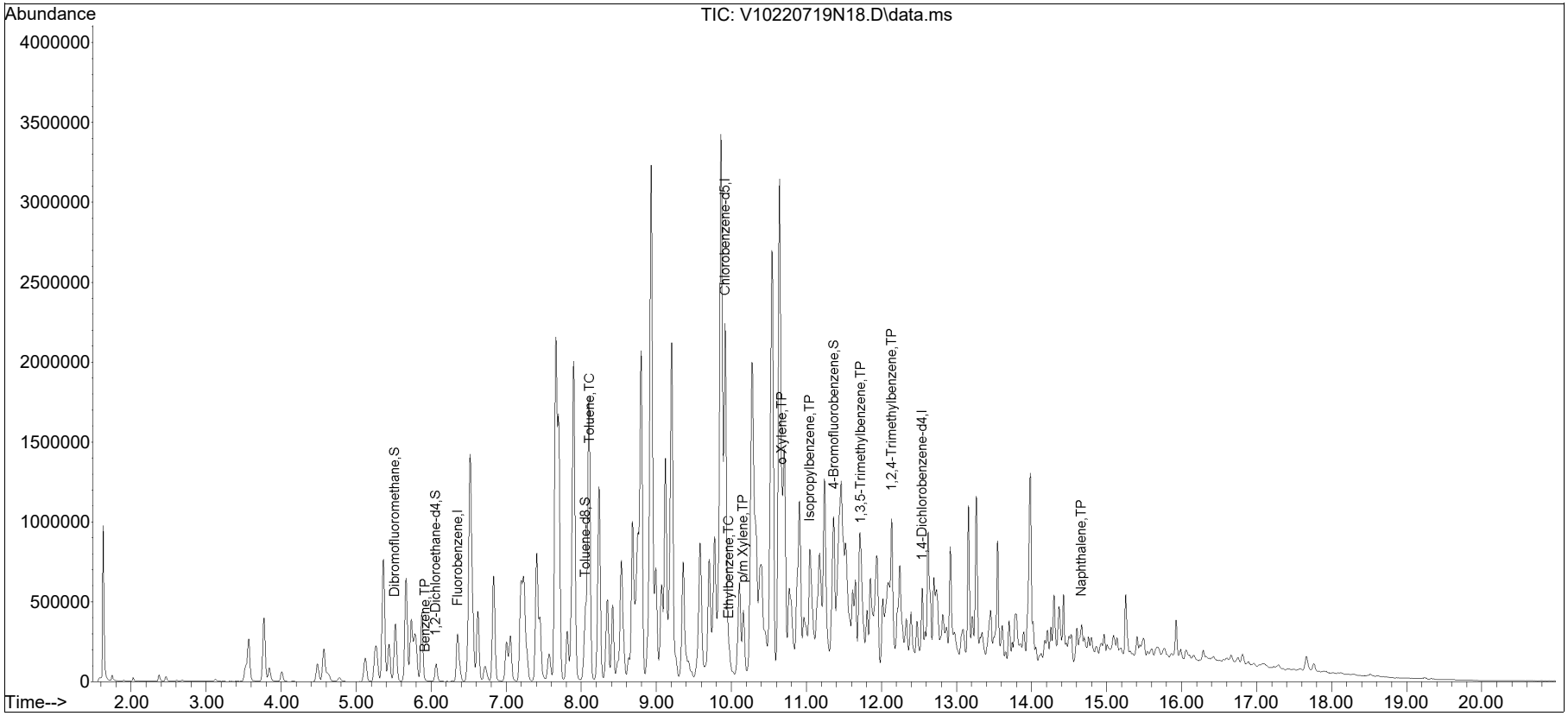


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N18.D
Acq On : 20 Jul 2022 5:54 am
Operator : VOA110:JC
Sample : l2238160-09,31,5.06,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 20 06:17:13 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\\V10220719N02.D•

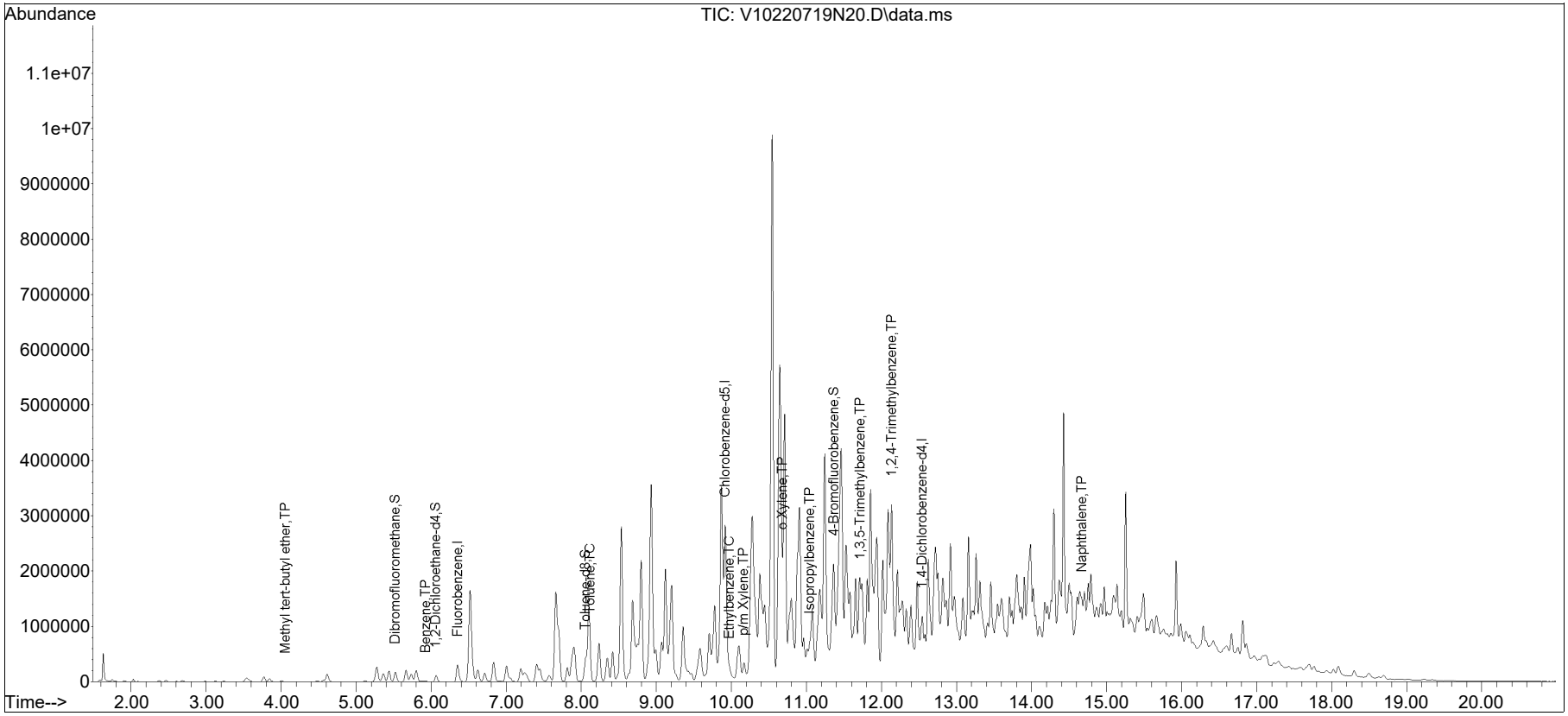


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2022\220719N\
Data File : V10220719N20.D
Acq On : 20 Jul 2022 6:51 am
Operator : VOA110:JC
Sample : l2238160-11,31,5.03,5,,b,r2f
Misc : WG1665206,ICAL18890
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 20 07:28:16 2022
Quant Method : I:\VOLATILES\VOA110\2022\220719N\V110_220401N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Mon Apr 04 06:52:50 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list19N\V10220719N01.D•



ANALYTICAL REPORT

Lab Number:	L2241030
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/05/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241030-01	GPR790-01-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:00	08/01/22
L2241030-02	GPR790-02-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:10	08/01/22
L2241030-03	GPR790-03-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:20	08/01/22
L2241030-04	GPR790-04-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:30	08/01/22
L2241030-05	GPR790-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:40	08/01/22
L2241030-06	GPR790-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:50	08/01/22
L2241030-07	GPR790-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:00	08/01/22
L2241030-08	GPR791-01-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:00	08/01/22
L2241030-09	GPR791-02-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:10	08/01/22
L2241030-10	GPR791-03-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:20	08/01/22
L2241030-11	GPR791-04-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:30	08/01/22
L2241030-12	GPR791-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:40	08/01/22
L2241030-13	GPR791-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:50	08/01/22
L2241030-14	GPR791-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 14:00	08/01/22
L2241030-15	GPR791-08-SS01	SOIL	PHILADELPHIA, PA	08/01/22 14:10	08/01/22
L2241030-16	FB-080122-1	WATER	PHILADELPHIA, PA	08/01/22 14:30	08/01/22
L2241030-17	FB-080122-2	WATER	PHILADELPHIA, PA	08/01/22 14:40	08/01/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2241030-06: The collection date and time on the chain of custody was 01-AUG-22 11:50; however, the collection date/time on the container label was 01-AUG-22 17:50. At the client's request, the collection date/time is reported as 01-AUG-22 11:50.

L2241030-07: The collection date and time on the chain of custody was 01-AUG-22 12:00; however, the collection date/time on the container label was 01-AUG-22 12:30. At the client's request, the collection date/time is reported as 01-AUG-22 12:00.

L2241030-14: The collection date and time on the chain of custody was 01-AUG-22 14:00; however, the collection date/time on the container label was 01-AUG-22 14:50. At the client's request, the collection date/time is reported as 01-AUG-22 14:00.

Volatile Organics

L2241030-04D and -09D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/05/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-01 D
Client ID: GPR790-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:07
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	520		mg/kg	3.4	1.1	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-02 D
Client ID: GPR790-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:27
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	130		mg/kg	0.30	0.10	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-03 D
Client ID: GPR790-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 09:46
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2.8		mg/kg	0.26	0.086	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-04 D
Client ID: GPR790-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:06
Analyst: NLK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.20	J	mg/kg	0.59	0.20	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-05 D
Client ID: GPR790-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:26
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	3000		mg/kg	26	8.6	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-06 D
Client ID: GPR790-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 10:45
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	4.6		mg/kg	0.42	0.14	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	92		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-07 D
Client ID: GPR790-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:05
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	34.		mg/kg	6.5	2.2	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-08 D
Client ID: GPR791-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:25
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1200		mg/kg	2.4	0.81	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-09 D
Client ID: GPR791-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:44
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	4.0	J	mg/kg	4.5	1.5	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-10 D
Client ID: GPR791-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:04
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	160		mg/kg	0.49	0.16	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-11 D
Client ID: GPR791-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:24
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1300		mg/kg	5.0	1.6	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-12 D
Client ID: GPR791-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:44
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	9.8		mg/kg	0.60	0.20	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-13 D
Client ID: GPR791-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:04
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	380		mg/kg	1.8	0.61	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-14 D
Client ID: GPR791-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:23
Analyst: NLK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	13.		mg/kg	0.29	0.097	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-15 D
Client ID: GPR791-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:43
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7.1		mg/kg	0.36	0.12	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-16
Client ID: FB-080122-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 11:39
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241030
Project Number: 200.00135.006
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-17
Client ID: FB-080122-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 12:03
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-15 Batch: WG1671226-5					
Benzene	ND		mg/kg	0.025	0.0083

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 16-17 Batch: WG1671475-5					
Benzene	ND		ug/l	0.50	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-15 Batch: WG1671226-3 WG1671226-4								
Benzene	82		87		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 16-17 Batch: WG1671475-3 WG1671475-4								
Benzene	92		95		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	80		82		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	121		117		70-130
Dibromofluoromethane	90		91		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-01
Client ID: GPR790-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-02
Client ID: GPR790-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.2		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-03
Client ID: GPR790-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-04
Client ID: GPR790-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:30
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-05
Client ID: GPR790-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:40
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-06
Client ID: GPR790-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 11:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.4		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-07
Client ID: GPR790-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 12:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-08
Client ID: GPR791-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-09
Client ID: GPR791-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.3		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-10
Client ID: GPR791-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-11
Client ID: GPR791-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-12
Client ID: GPR791-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:40
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-13
Client ID: GPR791-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 13:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-14
Client ID: GPR791-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 14:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.5		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241030
Report Date: 08/05/22

SAMPLE RESULTS

Lab ID: L2241030-15
Client ID: GPR791-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 14:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	08/02/22 08:49	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241030

Report Date: 08/05/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG1670051-1 QC Sample: L2241030-01 Client ID: GPR790-01-SS01						
Solids, Total	77.6	76.5	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-01A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-01B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-01C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-01D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-02A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-02B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-02C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-02D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-03A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-03B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-03C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-03D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-04A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-04B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-04C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-04D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-05A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-05B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-05C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-05D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-06A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-06B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-06C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-06D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-07A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-07B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-07C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-07D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-08A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-08B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-08C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-08D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-09A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-09B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-09C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-09D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-10A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-10B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-10C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-10D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-11A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-11B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-11C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-11D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-12A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-12B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-12C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-12D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-13A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-13B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-13C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241030
Report Date: 08/05/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241030-13D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-14A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-14B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-14C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-14D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-15A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2241030-15B	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-15C	Vial water preserved	B	NA		3.2	Y	Absent	02-AUG-22 06:20	PA-8260HLW(14)
L2241030-15D	Plastic 2oz unpreserved for TS	B	NA		3.2	Y	Absent		TS(7)
L2241030-16A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-16B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-16C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2241030-17C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241030
Project Number:	200.00135.006	**Report Date:**	08/05/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241030

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Report Information — Data Deliverables

- ☐ FAX
- ☒ EMAIL
- ☒ ADEx
- ☐ Add'l Deliverables

Billing Information

- ☐ Same as Client info
- PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program — Criteria

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments	TOTAL # BOTTLES
41036 01	GPR-790-01-5501	8/1/22	1100	S	AM	☑		4
02	GPR-790-02-5501		1110			☑		
03	GPR-790-03-5501		1120			☑		
04	GPR-790-04-5501		1130			☑		
05	GPR-790-05-5501		1140			☑		
06	GPR-790-06-5501		1150			☑		
07	GPR-790-07-5501		1200			☑		
08	GPR-791-01-5501		1300			☑		
09	GPR-791-02-5501		1310			☑		
10	GPR-791-03-5501		1320			☑		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22		8/1/22 14:48
	8/1/22 10:00		
	8/1/22 24:00		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241030

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program: Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Benzene	Sample Specific Comments	TOTAL # BOTTLES
41030 11	GPR-791-04-5501	8/1/22	1330	S		☑		4
12	GPR-791-05-5501		1340			☑		
13	GPR-791-06-5501		1350			☑		
14	GPR-791-07-5501		1400			☑		
15	GPR-791-08-5501		1410			☑		
16	FB-080122-1		1430	W		☑		
17	FB-080122-2		1440			☑		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-		
Preservative	-	-	-	-	-	-	-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22	AAL	8/1/22 14:48
	8/1/22 1800		8/1/22 2100
	8/1/22		8/2/22 23:3

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HW)
(rev. 9-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2241031
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/08/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241031-01	GPR1116-05-SS01	SOIL	PHILADELPHIA, PA	08/01/22 08:45	08/01/22
L2241031-02	GPR1116-06-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:00	08/01/22
L2241031-03	GPR1116-07-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:10	08/01/22
L2241031-04	GPR1116-08-SS01	SOIL	PHILADELPHIA, PA	08/01/22 09:50	08/01/22
L2241031-05	GPR1116-09-SS01	SOIL	PHILADELPHIA, PA	08/01/22 10:10	08/01/22
L2241031-06	GPR1116-10-SS01	SOIL	PHILADELPHIA, PA	08/01/22 10:30	08/01/22
L2241031-07	GPR1116-11-SS01	SOIL	PHILADELPHIA, PA	08/01/22 11:00	08/01/22
L2241031-08	GPR1116-12-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:30	08/01/22
L2241031-09	GPR1116-13-SS01	SOIL	PHILADELPHIA, PA	08/01/22 12:45	08/01/22
L2241031-10	GPR1116-14-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:20	08/01/22
L2241031-11	GPR1116-15-SS01	SOIL	PHILADELPHIA, PA	08/01/22 13:35	08/01/22
L2241031-12	FB-080122-3	WATER	PHILADELPHIA, PA	08/01/22 14:35	08/01/22
L2241031-13	FB-080122-4	WATER	PHILADELPHIA, PA	08/01/22 14:40	08/01/22
L2241031-14	TB-080122	WATER	PHILADELPHIA, PA	08/01/22 00:00	08/01/22
L2241031-15	DUP-48	SOIL	PHILADELPHIA, PA	08/01/22 00:00	08/01/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241031-01: The sample was analyzed as a High Level Methanol based upon screen results. The sample was then analyzed as a Low Level in order to achieve lower reporting limits. The results of both analyses are reported. Differences were noted between the results of the analyses which have been attributed to vial discrepancies.

L2241031-01: The internal standard (IS) responses for chlorobenzene-d5 (44%) and 1,4-dichlorobenzene-d4 (27%) and the surrogate recoveries for toluene-d8 (146%) and 4-bromofluorobenzene (410%) were outside the acceptance criteria; however, re-analysis achieved the following result: 1,2-dichloroethane-d4 (148%). The results of both analyses are reported.

L2241031-02D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

The surrogate recovery for the following samples is outside the acceptance criteria for 4-bromofluorobenzene; however, the samples were not re-analyzed due to coelution with an obvious interference. Copies of the chromatograms are included as an attachment to this report:

L2241031-02D: 169%

L2241031-03: 217%

L2241031-08: 152%

L2241031-09: 142%

L2241031-10: 167%

L2241031-11: 192%

L2241031-07: The internal standard (IS) responses for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (581%) were outside the acceptance criteria due to obvious interferences.

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2241031
Project Number: 200.00135.006 **Report Date:** 08/08/22

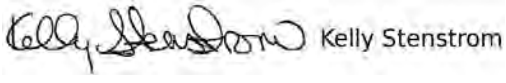
Case Narrative (continued)

A copy of the chromatogram is included as an attachment to this report. A high-level analysis was performed, and those results are also reported.
L2241031-11: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

Semivolatile Organics
L2241031-03D: The sample has elevated detection limits due to the limited sample volume utilized during extraction and the dilution required by the sample matrix.
L2241031-03D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Total Metals
L2241031-04 and -15: The sample has an elevated detection limit for lead due to the dilution required by matrix interferences encountered during analysis.
The WG1670165-3 MS recovery, performed on L2241031-01, is outside the acceptance criteria for lead (65%). A post digestion spike was performed and yielded an unacceptable recovery of 52%. The serial dilution recovery was not acceptable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.
The WG1670165-4 Laboratory Duplicate RPD for lead (35%), performed on L2241031-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.
The WG1670165-6 serial dilution analysis, associated with L2241031-01, had a %D above the acceptance criteria for lead (47%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 08/08/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:03
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	1
Benzene	0.053		mg/kg	0.047	0.016	1
1,2-Dichloroethane	ND		mg/kg	0.094	0.024	1
Toluene	0.078	J	mg/kg	0.094	0.051	1
1,2-Dibromoethane	ND		mg/kg	0.047	0.028	1
Ethylbenzene	0.022	J	mg/kg	0.094	0.013	1
p/m-Xylene	0.063	J	mg/kg	0.19	0.053	1
o-Xylene	0.056	J	mg/kg	0.094	0.027	1
Xylenes, Total	0.12	J	mg/kg	0.094	0.027	1
Isopropylbenzene	0.80		mg/kg	0.094	0.010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.19	0.018	1
1,2,4-Trimethylbenzene	0.78		mg/kg	0.19	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/04/22 14:24
Analyst: AJK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0036	0.00036	1
Benzene	0.0027		mg/kg	0.00089	0.00030	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00046	1
Toluene	0.0021		mg/kg	0.0018	0.00097	1
1,2-Dibromoethane	ND		mg/kg	0.00089	0.00052	1
Ethylbenzene	0.0016	J	mg/kg	0.0018	0.00025	1
p/m-Xylene	0.0041		mg/kg	0.0036	0.0010	1
o-Xylene	0.014		mg/kg	0.0018	0.00052	1
Xylenes, Total	0.018		mg/kg	0.0018	0.00052	1
Isopropylbenzene	0.046		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	0.0022	J	mg/kg	0.0036	0.00034	1
1,2,4-Trimethylbenzene	0.32		mg/kg	0.0036	0.00060	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	**146**	Q	70-130
4-Bromofluorobenzene	**410**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01 R
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 00:27
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.00064	J	mg/kg	0.00071	0.00024	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00077	1
1,2-Dibromoethane	ND		mg/kg	0.00071	0.00042	1
Ethylbenzene	0.00024	J	mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00080	1
o-Xylene	0.00082	J	mg/kg	0.0014	0.00041	1
Xylenes, Total	0.00082	J	mg/kg	0.0014	0.00041	1
Isopropylbenzene	0.00069	J	mg/kg	0.0014	0.00016	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.0033		mg/kg	0.0028	0.00047	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**148**	Q	70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	121		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02 D
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:23
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.5	0.15	10
Benzene	ND		mg/kg	0.38	0.13	10
1,2-Dichloroethane	ND		mg/kg	0.77	0.20	10
Toluene	ND		mg/kg	0.77	0.42	10
1,2-Dibromoethane	ND		mg/kg	0.38	0.22	10
Ethylbenzene	0.19	J	mg/kg	0.77	0.11	10
p/m-Xylene	0.92	J	mg/kg	1.5	0.43	10
o-Xylene	0.24	J	mg/kg	0.77	0.22	10
Xylenes, Total	1.2	J	mg/kg	0.77	0.22	10
Isopropylbenzene	18.		mg/kg	0.77	0.084	10
1,3,5-Trimethylbenzene	0.15	J	mg/kg	1.5	0.15	10
1,2,4-Trimethylbenzene	1.2	J	mg/kg	1.5	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**169**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 14:43
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.18	0.019	1
Benzene	0.037	J	mg/kg	0.046	0.015	1
1,2-Dichloroethane	ND		mg/kg	0.093	0.024	1
Toluene	0.17		mg/kg	0.093	0.050	1
1,2-Dibromoethane	ND		mg/kg	0.046	0.027	1
Ethylbenzene	0.087	J	mg/kg	0.093	0.013	1
p/m-Xylene	0.30		mg/kg	0.18	0.052	1
o-Xylene	0.13		mg/kg	0.093	0.027	1
Xylenes, Total	0.43		mg/kg	0.093	0.027	1
Isopropylbenzene	8.4		mg/kg	0.093	0.010	1
1,3,5-Trimethylbenzene	0.12	J	mg/kg	0.18	0.018	1
1,2,4-Trimethylbenzene	2.7		mg/kg	0.18	0.031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	**217**	Q	70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/04/22 14:02
Analyst: AJK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.016	1
Benzene	35.	E	mg/kg	0.039	0.013	1
1,2-Dichloroethane	ND		mg/kg	0.078	0.020	1
Toluene	6.8		mg/kg	0.078	0.042	1
1,2-Dibromoethane	ND		mg/kg	0.039	0.023	1
Ethylbenzene	0.34		mg/kg	0.078	0.011	1
p/m-Xylene	1.0		mg/kg	0.16	0.043	1
o-Xylene	0.075	J	mg/kg	0.078	0.022	1
Xylenes, Total	1.1	J	mg/kg	0.078	0.022	1
Isopropylbenzene	0.022	J	mg/kg	0.078	0.0084	1
1,3,5-Trimethylbenzene	0.025	J	mg/kg	0.16	0.015	1
1,2,4-Trimethylbenzene	0.10	J	mg/kg	0.16	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04 D
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 15:03
Analyst: NLK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	28.		mg/kg	0.19	0.064	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 15:23
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	ND		mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	ND		mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.00064	J	mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:04
Analyst: NLK
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	0.00030	J	mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.00084	J	mg/kg	0.0010	0.00055	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	0.00022	J	mg/kg	0.0010	0.00014	1
p/m-Xylene	0.0010	J	mg/kg	0.0020	0.00057	1
o-Xylene	0.00056	J	mg/kg	0.0010	0.00029	1
Xylenes, Total	0.0016	J	mg/kg	0.0010	0.00029	1
Isopropylbenzene	0.00054	J	mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	0.00025	J	mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	0.00072	J	mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 11:24
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.017	1
Benzene	ND		mg/kg	0.041	0.014	1
1,2-Dichloroethane	ND		mg/kg	0.083	0.021	1
Toluene	ND		mg/kg	0.083	0.045	1
1,2-Dibromoethane	ND		mg/kg	0.041	0.024	1
Ethylbenzene	0.015	J	mg/kg	0.083	0.012	1
p/m-Xylene	0.084	J	mg/kg	0.16	0.046	1
o-Xylene	0.026	J	mg/kg	0.083	0.024	1
Xylenes, Total	0.11	J	mg/kg	0.083	0.024	1
Isopropylbenzene	0.068	J	mg/kg	0.083	0.0090	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.16	0.016	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.16	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 01:08
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	ND		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.00090	J	mg/kg	0.0012	0.00065	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	ND		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0017	J	mg/kg	0.0024	0.00067	1
o-Xylene	0.0032		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0049	J	mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.017		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0016	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0037		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**581**	Q	70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 03:56
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.13	0.013	1
Benzene	0.052		mg/kg	0.033	0.011	1
1,2-Dichloroethane	ND		mg/kg	0.066	0.017	1
Toluene	0.29		mg/kg	0.066	0.036	1
1,2-Dibromoethane	ND		mg/kg	0.033	0.019	1
Ethylbenzene	0.12		mg/kg	0.066	0.0093	1
p/m-Xylene	1.1		mg/kg	0.13	0.037	1
o-Xylene	0.16		mg/kg	0.066	0.019	1
Xylenes, Total	1.3		mg/kg	0.066	0.019	1
Isopropylbenzene	3.8		mg/kg	0.066	0.0072	1
1,3,5-Trimethylbenzene	3.8		mg/kg	0.13	0.013	1
1,2,4-Trimethylbenzene	16.		mg/kg	0.13	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	126		70-130
4-Bromofluorobenzene	**152**	Q	70-130
Dibromofluoromethane	78		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:06
Analyst: NLK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0026	0.00026	1
Benzene	0.00064	J	mg/kg	0.00065	0.00022	1
1,2-Dichloroethane	ND		mg/kg	0.0013	0.00034	1
Toluene	0.0029		mg/kg	0.0013	0.00071	1
1,2-Dibromoethane	ND		mg/kg	0.00065	0.00038	1
Ethylbenzene	0.0011	J	mg/kg	0.0013	0.00018	1
p/m-Xylene	0.0086		mg/kg	0.0026	0.00073	1
o-Xylene	0.0056		mg/kg	0.0013	0.00038	1
Xylenes, Total	0.014		mg/kg	0.0013	0.00038	1
Isopropylbenzene	0.0034		mg/kg	0.0013	0.00014	1
1,3,5-Trimethylbenzene	0.0018	J	mg/kg	0.0026	0.00025	1
1,2,4-Trimethylbenzene	0.0048		mg/kg	0.0026	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**142**	Q	70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:27
Analyst: NLK
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0012		mg/kg	0.00093	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0019	0.00048	1
Toluene	ND		mg/kg	0.0019	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00093	0.00054	1
Ethylbenzene	0.00041	J	mg/kg	0.0019	0.00026	1
p/m-Xylene	0.0012	J	mg/kg	0.0037	0.0010	1
o-Xylene	0.0013	J	mg/kg	0.0019	0.00054	1
Xylenes, Total	0.0025	J	mg/kg	0.0019	0.00054	1
Isopropylbenzene	0.020		mg/kg	0.0019	0.00020	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.0014	J	mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**167**	Q	70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 12:48
Analyst: NLK
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.39	0.039	1
Benzene	0.050	J	mg/kg	0.097	0.032	1
1,2-Dichloroethane	ND		mg/kg	0.19	0.050	1
Toluene	0.35		mg/kg	0.19	0.10	1
1,2-Dibromoethane	ND		mg/kg	0.097	0.057	1
Ethylbenzene	0.27		mg/kg	0.19	0.027	1
p/m-Xylene	1.1		mg/kg	0.39	0.11	1
o-Xylene	0.27		mg/kg	0.19	0.056	1
Xylenes, Total	1.4		mg/kg	0.19	0.056	1
Isopropylbenzene	1.1		mg/kg	0.19	0.021	1
1,3,5-Trimethylbenzene	0.38	J	mg/kg	0.39	0.037	1
1,2,4-Trimethylbenzene	2.6		mg/kg	0.39	0.064	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**192**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:34
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:41
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 09:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-14
Client ID: TB-080122
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/02/22 18:47
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-14
Client ID: TB-080122
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/02/22 09:42
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/03/22 13:09
Analyst: NLK
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0035	0.00035	1
Benzene	ND		mg/kg	0.00088	0.00029	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00045	1
Toluene	ND		mg/kg	0.0018	0.00095	1
1,2-Dibromoethane	ND		mg/kg	0.00088	0.00051	1
Ethylbenzene	ND		mg/kg	0.0018	0.00025	1
p/m-Xylene	0.0011	J	mg/kg	0.0035	0.00098	1
o-Xylene	0.0016	J	mg/kg	0.0018	0.00051	1
Xylenes, Total	0.0027	J	mg/kg	0.0018	0.00051	1
Isopropylbenzene	0.0040		mg/kg	0.0018	0.00019	1
1,3,5-Trimethylbenzene	0.0012	J	mg/kg	0.0035	0.00034	1
1,2,4-Trimethylbenzene	0.0038		mg/kg	0.0035	0.00058	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/02/22 18:07
Analyst: GT

Extraction Method: EPA 8011
Extraction Date: 08/02/22 16:04

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 12-14 Batch: WG1670324-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1671226-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 05 Batch: WG1671227-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06,09-10,15 Batch: WG1671352-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/03/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 07,11 Batch: WG1671356-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/02/22 08:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 12-14 Batch: WG1671475-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG1671502-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1671744-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 20:35
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,07 Batch: WG1671753-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 20:35
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08 Batch: WG1671755-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 12-14		Batch: WG1670324-2						
1,2-Dibromoethane	118		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1671226-3 WG1671226-4								
Methyl tert butyl ether	83		90		66-130	8		30
Benzene	82		87		70-130	6		30
1,2-Dichloroethane	82		89		70-130	8		30
Toluene	77		80		70-130	4		30
1,2-Dibromoethane	80		87		70-130	8		30
Ethylbenzene	83		86		70-130	4		30
p/m-Xylene	83		87		70-130	5		30
o-Xylene	85		89		70-130	5		30
Isopropylbenzene	84		88		70-130	5		30
1,3,5-Trimethylbenzene	85		88		70-130	3		30
1,2,4-Trimethylbenzene	84		87		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 05 Batch: WG1671227-3 WG1671227-4								
Methyl tert butyl ether	83		90		66-130	8		30
Benzene	82		87		70-130	6		30
1,2-Dichloroethane	82		89		70-130	8		30
Toluene	77		80		70-130	4		30
1,2-Dibromoethane	80		87		70-130	8		30
Ethylbenzene	83		86		70-130	4		30
p/m-Xylene	83		87		70-130	5		30
o-Xylene	85		89		70-130	5		30
Isopropylbenzene	84		88		70-130	5		30
1,3,5-Trimethylbenzene	85		88		70-130	3		30
1,2,4-Trimethylbenzene	84		87		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		103		70-130
Toluene-d8	101		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06,09-10,15 Batch: WG1671352-3 WG1671352-4								
Methyl tert butyl ether	77		78		66-130	1		30
Benzene	85		84		70-130	1		30
1,2-Dichloroethane	84		84		70-130	0		30
Toluene	85		86		70-130	1		30
1,2-Dibromoethane	88		89		70-130	1		30
Ethylbenzene	91		90		70-130	1		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		90		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	94		92		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	90		88		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 07,11 Batch: WG1671356-3 WG1671356-4								
Methyl tert butyl ether	77		78		66-130	1		30
Benzene	85		84		70-130	1		30
1,2-Dichloroethane	84		84		70-130	0		30
Toluene	85		86		70-130	1		30
1,2-Dibromoethane	88		89		70-130	1		30
Ethylbenzene	91		90		70-130	1		30
p/m-Xylene	91		90		70-130	1		30
o-Xylene	90		90		70-130	0		30
Isopropylbenzene	91		90		70-130	1		30
1,3,5-Trimethylbenzene	92		92		70-130	0		30
1,2,4-Trimethylbenzene	94		92		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	90		88		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 12-14 Batch: WG1671475-3 WG1671475-4								
Methyl tert butyl ether	91		98		63-130	7		20
Benzene	92		95		70-130	3		20
1,2-Dichloroethane	83		87		70-130	5		20
Toluene	99		100		70-130	1		20
1,2-Dibromoethane	89		97		70-130	9		20
Ethylbenzene	99		100		70-130	1		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Isopropylbenzene	120		120		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	80		82		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	121		117		70-130
Dibromofluoromethane	90		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG1671502-3 WG1671502-4								
Methyl tert butyl ether	75		74		66-130	1		30
Benzene	83		82		70-130	1		30
1,2-Dichloroethane	81		81		70-130	0		30
Toluene	83		82		70-130	1		30
1,2-Dibromoethane	85		84		70-130	1		30
Ethylbenzene	88		87		70-130	1		30
p/m-Xylene	88		88		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	89		87		70-130	2		30
1,3,5-Trimethylbenzene	90		87		70-130	3		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	92		90		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1671744-3 WG1671744-4								
Methyl tert butyl ether	75		74		66-130	1		30
Benzene	83		82		70-130	1		30
1,2-Dichloroethane	81		81		70-130	0		30
Toluene	83		82		70-130	1		30
1,2-Dibromoethane	85		84		70-130	1		30
Ethylbenzene	88		87		70-130	1		30
p/m-Xylene	88		88		70-130	0		30
o-Xylene	87		88		70-130	1		30
Isopropylbenzene	89		87		70-130	2		30
1,3,5-Trimethylbenzene	90		87		70-130	3		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	93		94		70-130
Dibromofluoromethane	92		90		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,07 Batch: WG1671753-3 WG1671753-4								
Methyl tert butyl ether	110		90		66-130	20		30
Benzene	102		102		70-130	0		30
1,2-Dichloroethane	96		98		70-130	2		30
Toluene	98		101		70-130	3		30
1,2-Dibromoethane	96		100		70-130	4		30
Ethylbenzene	102		104		70-130	2		30
p/m-Xylene	102		104		70-130	2		30
o-Xylene	99		102		70-130	3		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	90		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08 Batch: WG1671755-3 WG1671755-4								
Methyl tert butyl ether	110		90		66-130	20		30
Benzene	102		102		70-130	0		30
1,2-Dichloroethane	96		98		70-130	2		30
Toluene	98		101		70-130	3		30
1,2-Dibromoethane	96		100		70-130	4		30
Ethylbenzene	102		104		70-130	2		30
p/m-Xylene	102		104		70-130	2		30
o-Xylene	99		102		70-130	3		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	104		104		70-130	0		30
1,2,4-Trimethylbenzene	105		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	95		92		70-130
Dibromofluoromethane	90		92		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 13:03
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.35		mg/kg	0.22	0.026	1
Fluorene	0.056	J	mg/kg	0.22	0.021	1
Phenanthrene	0.15		mg/kg	0.13	0.026	1
Anthracene	0.055	J	mg/kg	0.13	0.042	1
Pyrene	0.21		mg/kg	0.13	0.021	1
Benzo(a)anthracene	0.24		mg/kg	0.13	0.024	1
Chrysene	0.27		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	0.42		mg/kg	0.13	0.036	1
Benzo(a)pyrene	0.40		mg/kg	0.17	0.052	1
Benzo(ghi)perylene	0.26		mg/kg	0.17	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	55		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 13:27
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.1		mg/kg	0.20	0.024	1
Fluorene	0.22		mg/kg	0.20	0.019	1
Phenanthrene	0.67		mg/kg	0.12	0.024	1
Anthracene	0.18		mg/kg	0.12	0.038	1
Pyrene	0.55		mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.27		mg/kg	0.12	0.022	1
Chrysene	0.30		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.44		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.41		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.31		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	44		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03 D
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/08/22 12:10
Analyst: SZ
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	11	1.3	20
Fluorene	1.4	J	mg/kg	11	1.1	20
Phenanthrene	2.8	J	mg/kg	6.6	1.3	20
Anthracene	ND		mg/kg	6.6	2.2	20
Pyrene	ND		mg/kg	6.6	1.1	20
Benzo(a)anthracene	ND		mg/kg	6.6	1.2	20
Chrysene	ND		mg/kg	6.6	1.2	20
Benzo(b)fluoranthene	ND		mg/kg	6.6	1.9	20
Benzo(a)pyrene	ND		mg/kg	8.8	2.7	20
Benzo(ghi)perylene	ND		mg/kg	8.8	1.3	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 14:14
Analyst: CMM
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.21	0.025	1
Fluorene	0.024	J	mg/kg	0.21	0.020	1
Phenanthrene	0.062	J	mg/kg	0.12	0.025	1
Anthracene	ND		mg/kg	0.12	0.041	1
Pyrene	0.041	J	mg/kg	0.12	0.021	1
Benzo(a)anthracene	0.029	J	mg/kg	0.12	0.024	1
Chrysene	0.030	J	mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	0.035	J	mg/kg	0.12	0.035	1
Benzo(a)pyrene	ND		mg/kg	0.17	0.051	1
Benzo(ghi)perylene	ND		mg/kg	0.17	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:01
Analyst: CMM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.20	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	ND		mg/kg	0.12	0.020	1
Benzo(a)anthracene	ND		mg/kg	0.12	0.022	1
Chrysene	ND		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	47		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:25
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.2		mg/kg	0.22	0.026	1
Fluorene	0.14	J	mg/kg	0.22	0.021	1
Phenanthrene	0.34		mg/kg	0.13	0.026	1
Anthracene	0.22		mg/kg	0.13	0.042	1
Pyrene	0.38		mg/kg	0.13	0.022	1
Benzo(a)anthracene	0.40		mg/kg	0.13	0.024	1
Chrysene	0.52		mg/kg	0.13	0.022	1
Benzo(b)fluoranthene	1.2		mg/kg	0.13	0.036	1
Benzo(a)pyrene	1.4		mg/kg	0.17	0.053	1
Benzo(ghi)perylene	0.94		mg/kg	0.17	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	64		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 15:48
Analyst: CMM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.20	0.024	1
Fluorene	0.036	J	mg/kg	0.20	0.019	1
Phenanthrene	0.083	J	mg/kg	0.12	0.024	1
Anthracene	0.039	J	mg/kg	0.12	0.038	1
Pyrene	0.16		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.13		mg/kg	0.12	0.022	1
Chrysene	0.16		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.18		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.17		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.092	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	48		30-120
4-Terphenyl-d14	33		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:12
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.32		mg/kg	0.19	0.023	1
Fluorene	1.2		mg/kg	0.19	0.018	1
Phenanthrene	1.6		mg/kg	0.11	0.023	1
Anthracene	0.45		mg/kg	0.11	0.036	1
Pyrene	0.62		mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.34		mg/kg	0.11	0.021	1
Chrysene	0.92		mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.68		mg/kg	0.11	0.031	1
Benzo(a)pyrene	0.62		mg/kg	0.15	0.046	1
Benzo(ghi)perylene	0.31		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**157**	Q	23-120
2-Fluorobiphenyl	34		30-120
4-Terphenyl-d14	23		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:35
Analyst: CMM
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3		mg/kg	0.21	0.025	1
Fluorene	0.53		mg/kg	0.21	0.020	1
Phenanthrene	1.5		mg/kg	0.12	0.025	1
Anthracene	0.48		mg/kg	0.12	0.040	1
Pyrene	1.5		mg/kg	0.12	0.021	1
Benzo(a)anthracene	0.85		mg/kg	0.12	0.023	1
Chrysene	0.86		mg/kg	0.12	0.022	1
Benzo(b)fluoranthene	0.92		mg/kg	0.12	0.035	1
Benzo(a)pyrene	0.97		mg/kg	0.16	0.050	1
Benzo(ghi)perylene	0.45		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	47		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 16:59
Analyst: CMM
Percent Solids: 60%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.37		mg/kg	0.27	0.033	1
Fluorene	0.74		mg/kg	0.27	0.027	1
Phenanthrene	1.5		mg/kg	0.16	0.033	1
Anthracene	0.18		mg/kg	0.16	0.054	1
Pyrene	0.62		mg/kg	0.16	0.027	1
Benzo(a)anthracene	0.42		mg/kg	0.16	0.031	1
Chrysene	0.36		mg/kg	0.16	0.028	1
Benzo(b)fluoranthene	0.44		mg/kg	0.16	0.046	1
Benzo(a)pyrene	0.43		mg/kg	0.22	0.067	1
Benzo(ghi)perylene	0.19	J	mg/kg	0.22	0.032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	54		30-120
4-Terphenyl-d14	38		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 17:46
Analyst: CMM
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.9		mg/kg	0.23	0.028	1
Fluorene	0.52		mg/kg	0.23	0.022	1
Phenanthrene	2.8		mg/kg	0.14	0.028	1
Anthracene	1.3		mg/kg	0.14	0.045	1
Pyrene	4.3		mg/kg	0.14	0.023	1
Benzo(a)anthracene	3.7		mg/kg	0.14	0.026	1
Chrysene	3.7		mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	5.1		mg/kg	0.14	0.039	1
Benzo(a)pyrene	5.2		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	3.8		mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	51		30-120
4-Terphenyl-d14	45		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:23
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	0.05	J	ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.01	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	74		15-120
4-Terphenyl-d14	83		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:39
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	84		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/03/22 18:10
Analyst: CMM
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 08/02/22 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.16	J	mg/kg	0.23	0.028	1
Fluorene	0.087	J	mg/kg	0.23	0.022	1
Phenanthrene	0.19		mg/kg	0.14	0.028	1
Anthracene	ND		mg/kg	0.14	0.044	1
Pyrene	0.10	J	mg/kg	0.14	0.023	1
Benzo(a)anthracene	0.040	J	mg/kg	0.14	0.026	1
Chrysene	0.044	J	mg/kg	0.14	0.024	1
Benzo(b)fluoranthene	0.042	J	mg/kg	0.14	0.038	1
Benzo(a)pyrene	ND		mg/kg	0.18	0.056	1
Benzo(ghi)perylene	0.028	J	mg/kg	0.18	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	76		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/02/22 16:42
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/02/22 06:01

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-11,15 Batch: WG1670007-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.097	0.020
Anthracene	ND		mg/kg	0.097	0.032
Pyrene	ND		mg/kg	0.097	0.016
Benzo(a)anthracene	ND		mg/kg	0.097	0.018
Chrysene	ND		mg/kg	0.097	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.097	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	95		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/03/22 11:07
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/02/22 19:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 12-13 Batch: WG1670368-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	48		15-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-11,15 Batch: WG1670007-2 WG1670007-3								
Naphthalene	72		72		40-140	0		50
Fluorene	77		77		40-140	0		50
Phenanthrene	71		71		40-140	0		50
Anthracene	75		75		40-140	0		50
Pyrene	71		70		35-142	1		50
Benzo(a)anthracene	82		78		40-140	5		50
Chrysene	78		74		40-140	5		50
Benzo(b)fluoranthene	94		93		40-140	1		50
Benzo(a)pyrene	94		92		40-140	2		50
Benzo(ghi)perylene	77		73		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	82		83		23-120
2-Fluorobiphenyl	77		76		30-120
4-Terphenyl-d14	86		84		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 12-13 Batch: WG1670368-2 WG1670368-3								
Naphthalene	77		83		40-140	8		40
Fluorene	82		88		40-140	7		40
Phenanthrene	86		92		40-140	7		40
Anthracene	87		92		40-140	6		40
Pyrene	97		97		26-127	0		40
Benzo(a)anthracene	104		100		40-140	4		40
Chrysene	102		98		40-140	4		40
Benzo(b)fluoranthene	105		103		40-140	2		40
Benzo(a)pyrene	95		92		40-140	3		40
Benzo(ghi)perylene	111		108		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	79		87		23-120
2-Fluorobiphenyl	72		78		15-120
4-Terphenyl-d14	88		86		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	67.9		mg/kg	2.49	0.134	1	08/02/22 15:27	08/06/22 19:03	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	104		mg/kg	2.25	0.121	1	08/02/22 15:27	08/06/22 19:59	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	119		mg/kg	2.25	0.121	1	08/02/22 15:27	08/06/22 20:04	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	85.3		mg/kg	12.2	0.652	5	08/02/22 15:27	08/08/22 20:03	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	40.8		mg/kg	2.31	0.124	1	08/02/22 15:27	08/06/22 20:13	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	13.9		mg/kg	2.48	0.133	1	08/02/22 15:27	08/06/22 20:18	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	193		mg/kg	2.30	0.123	1	08/02/22 15:27	08/06/22 20:32	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	97.5		mg/kg	2.15	0.115	1	08/02/22 15:27	08/06/22 20:37	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	375		mg/kg	2.37	0.127	1	08/02/22 15:27	08/06/22 20:41	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 60%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	60.2		mg/kg	3.22	0.172	1	08/02/22 15:27	08/06/22 20:46	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	189		mg/kg	2.68	0.143	1	08/02/22 15:27	08/06/22 20:50	EPA 3050B	1,6010D	MC

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-12
Client ID: FB-080122-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:35
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 21:18	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-13
Client ID: FB-080122-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 14:40
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 21:23	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241031
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	206		mg/kg	13.4	0.716	5	08/02/22 15:27	08/08/22 20:08	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 12-13 Batch: WG1670146-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	08/02/22 11:07	08/02/22 20:05	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-11,15 Batch: WG1670165-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/02/22 15:27	08/06/22 18:40	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 12-13 Batch: WG1670146-2								
Lead, Total	95		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 Batch: WG1670165-2 SRM Lot Number: D113-540								
Lead, Total	93		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 12-13 QC Batch ID: WG1670146-3 QC Sample: L2241079-01 Client ID: MS Sample												
Lead, Total	3.328	530	527.1	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-3 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01												
Lead, Total	67.9	52.7	102	**65**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-4 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Lead, Total	67.9	96.4	mg/kg	**35**	Q	20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2241031
Report Date: 08/08/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-11,15 QC Batch ID: WG1670165-6 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Lead, Total	67.9	99.7	mg/kg	**47**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-01
Client ID: GPR1116-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 08:45
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.1		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-02
Client ID: GPR1116-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-03
Client ID: GPR1116-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-04
Client ID: GPR1116-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 09:50
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-05
Client ID: GPR1116-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 10:10
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-06
Client ID: GPR1116-10-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 10:30
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.1		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-07
Client ID: GPR1116-11-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 11:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.3		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-08
Client ID: GPR1116-12-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/01/22 12:30
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.2		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-09
Client ID: GPR1116-13-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 12:45
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.7		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-10
Client ID: GPR1116-14-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:20
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	59.6		%	0.100	NA	1	-	08/02/22 10:14	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-11
Client ID: GPR1116-15-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 13:35
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.4		%	0.100	NA	1	-	08/02/22 09:28	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241031
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241031-15
Client ID: DUP-48
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/01/22 00:00
Date Received: 08/01/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.0		%	0.100	NA	1	-	08/02/22 09:28	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241031

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 11,15 QC Batch ID: WG1670059-1 QC Sample: L2241056-01 Client ID: DUP Sample						
Solids, Total	82.3	82.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1670085-1 QC Sample: L2241031-01 Client ID: GPR1116-05-SS01						
Solids, Total	76.1	76.7	%	1		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-01A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241031-01B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-01C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-01D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-01F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-02A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-02B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-02C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-02D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-02E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-02F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-03A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-03B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-03C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-03D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-03F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-04A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-04B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-04C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-04D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-04F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-05A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-05B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-05C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-05D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-05F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-06A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-06B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-06C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-06D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-06F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-07A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241031-07B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-07C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260H(14),PA-8260HLW(14)
L2241031-07D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-07F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-08A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)
L2241031-08B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-08C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-08D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-08E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-08F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-09A	Vial MeOH preserved	C	NA		3.9	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-09B	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-09C	Vial water preserved	C	NA		3.9	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-09D	Plastic 2oz unpreserved for TS	C	NA		3.9	Y	Absent		TS(7)
L2241031-09E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.9	Y	Absent		PB-TI(180)
L2241031-09F	Glass 250ml/8oz unpreserved	C	NA		3.9	Y	Absent		PA-PAH(14)
L2241031-10A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-10B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-10C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 06:54	PA-8260HLW(14)
L2241031-10D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-10E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-10F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-11A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-11B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-11C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-11D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-11E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-11F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)
L2241031-12A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12C	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-12D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-12E	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-12F	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-12G	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-12H	Plastic 250ml HNO3 preserved	C	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2241031-13A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-13B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-13C	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241031
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241031-13D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-13E	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-13F	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-13G	Amber 250ml unpreserved	C	7	7	3.9	Y	Absent		PA-PAHSIM-LVI(7)
L2241031-13H	Plastic 250ml HNO3 preserved	C	<2	<2	3.9	Y	Absent		PB-6020T-PPB(180)
L2241031-14A	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-14B	Vial HCl preserved	C	NA		3.9	Y	Absent		PA-8260(14)
L2241031-14C	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-14D	Vial Na2S2O3 preserved	C	NA		3.9	Y	Absent		8011(14)
L2241031-15A	Vial MeOH preserved	A	NA		3.3	Y	Absent		PA-8260HLW(14)
L2241031-15B	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-15C	Vial water preserved	A	NA		3.3	Y	Absent	02-AUG-22 07:11	PA-8260HLW(14)
L2241031-15D	Plastic 2oz unpreserved for TS	A	NA		3.3	Y	Absent		TS(7)
L2241031-15E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.3	Y	Absent		PB-TI(180)
L2241031-15F	Glass 250ml/8oz unpreserved	A	NA		3.3	Y	Absent		PA-PAH(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241031
Project Number:	200.00135.006	**Report Date:**	08/08/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241031

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5 DAY*

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41031 01	GPR1116-05-5501	8/1	0845	S	TS	
02	GPR1116-06-5501		0900			
03	GPR1116-07-5501		0960			
04	GPR1116-08-5501		0956			
05	GPR1116-09-5501		1010			
06	GPR1116-10-5501		630			
07	GPR1116-11-5501		1100			
08	GPR1116-12-5501		1230			
09	GPR1116-13-5501		1245			
10	GPR1116-14-5501		1320			

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22	ST-AAL	8/1/22 14:40
	8/1/22 A'o		
	8/1/22 20		8/1/22 23:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(MA-LI) (rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/2/22

ALPHA Job #: L2241031

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5-DAY

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5 | VOC (Option of SL1-5) | EDB (8011)

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41031 11	CPRH16-15-5501	8/1	1335	S	TS	
12	FB-080122-3		1435	W	TS	
13	FB-GR0122-1		1440	W	TS	
14	TB-080122		-	W	TS	
15	DUP-48		-	S	TS	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/1/22		8/1/22 1449
	8/1/22 1801		8/1 1802
	8/1/22 2100		8/1/22 2300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 8-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

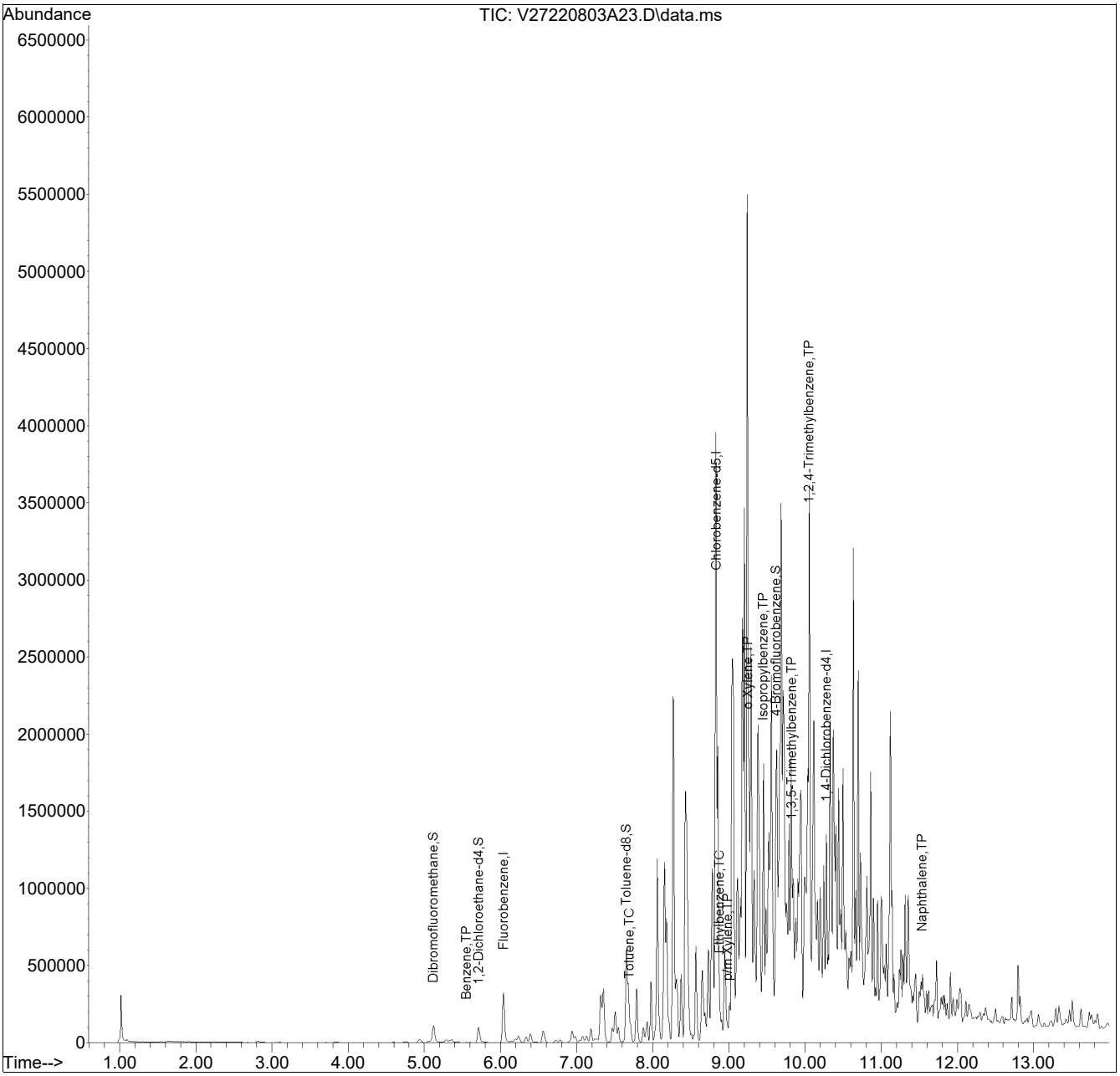
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA127\2022\220803A\
Data File : V27220803A23.D
Acq On : 03 Aug 2022 02:23 pm
Operator : VOA127:NLK
Sample : L2241031-02D,31H,4.39,5,0.010,,A
Misc : WG1671226,ICAL19153
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 04 09:48:00 2022
Quant Method : I:\VOLATILES\VOA127\2022\220803A\V127_220706A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 07 06:48:30 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V27220803A01.D•



Quantitation Report (QT Reviewed)

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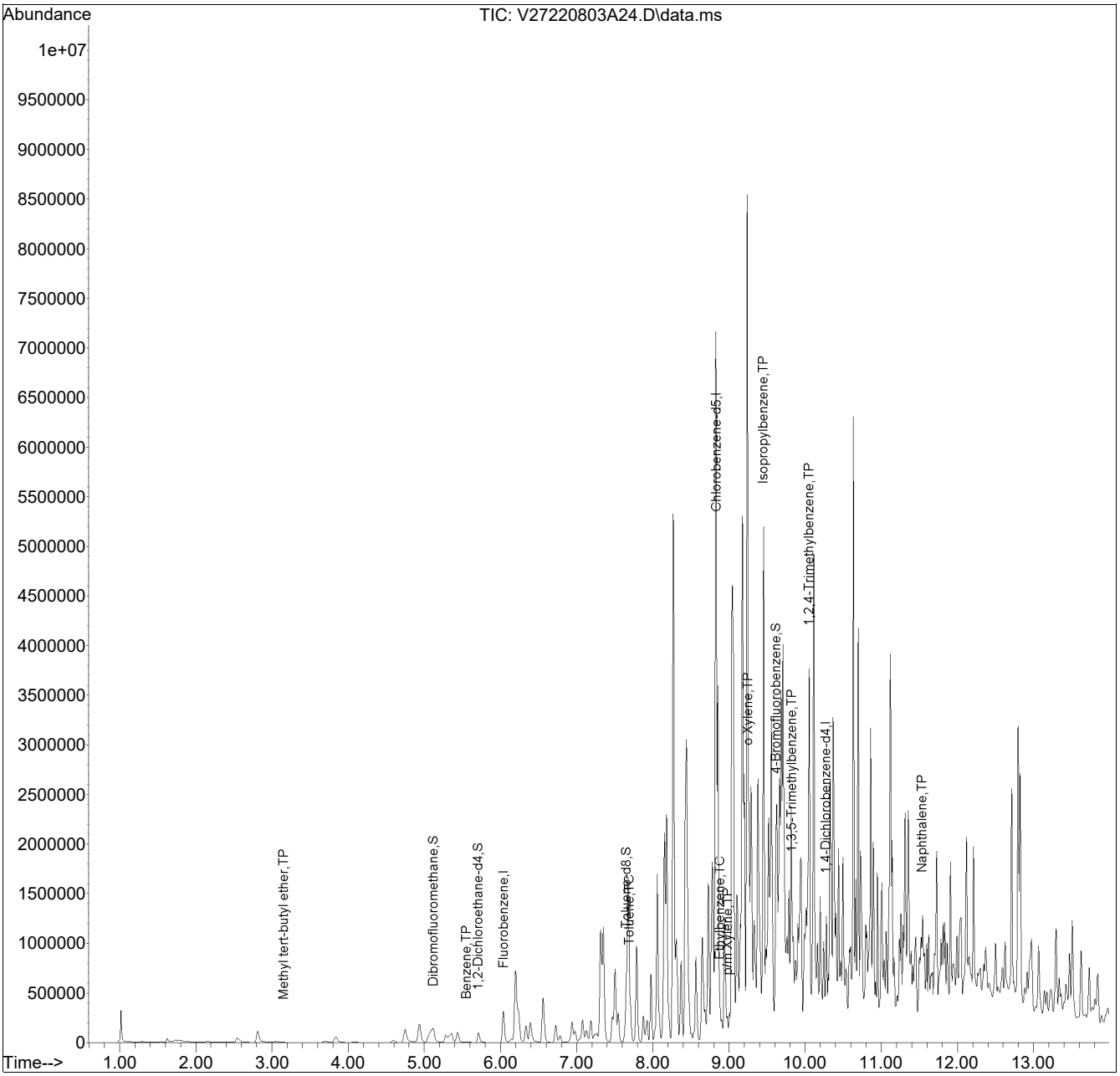
Data File : V27220803A24.D
Acq On : 03 Aug 2022 02:43 pm
Operator : VOA127:NLK
Sample : L2241031-03,31H,3.61,5,0.100,,A
Misc : WG1671226,ICAL19153
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 04 09:54:45 2022
Quant Method : I:\VOLATILES\VOA127\2022\220803A\V127_220706A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 07 06:48:30 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V27220803A01.D•

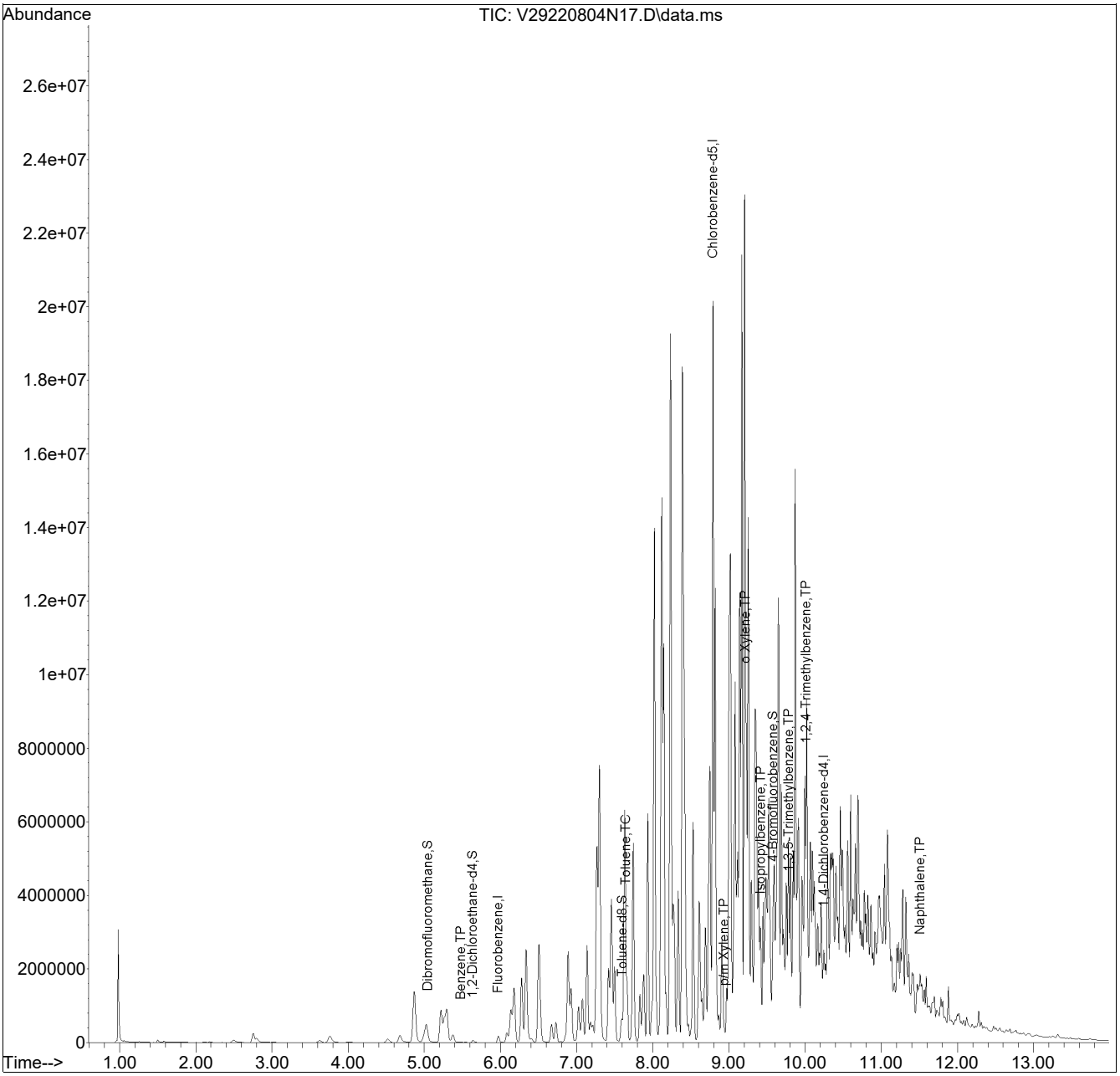


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220804N\
Data File : V29220804N17.D
Acq On : 05 Aug 2022 01:08 am
Operator : VOA129:NLK
Sample : l2241031-07,31,5.09,5,,b
Misc : WG1671753,ICAL19173
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Aug 05 12:24:36 2022
Quant Method : I:\VOLATILES\VOA129\2022\220804N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list04N\V29220804N01.D•



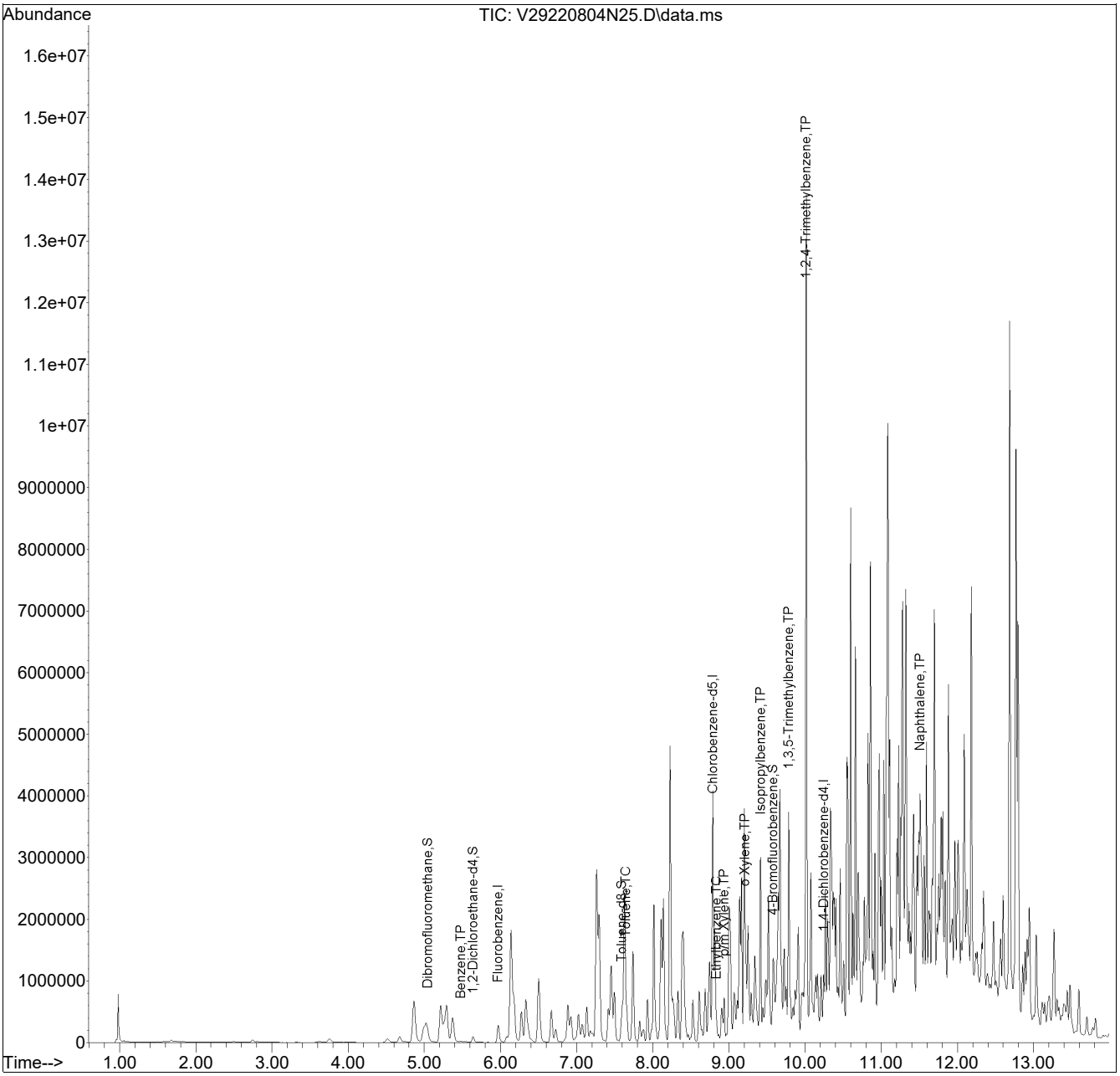
V129_220712N_8260.m Fri Aug 05 12:25:09 2022 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220804N\
Data File : V29220804N25.D
Acq On : 05 Aug 2022 03:56 am
Operator : VOA129:NLK
Sample : l2241031-08,31h,4.68,5,0.100,,a
Misc : WG1671755,ICAL19173
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Aug 05 07:51:26 2022
Quant Method : I:\VOLATILES\VOA129\2022\220804N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list04N\V29220804N01.D•

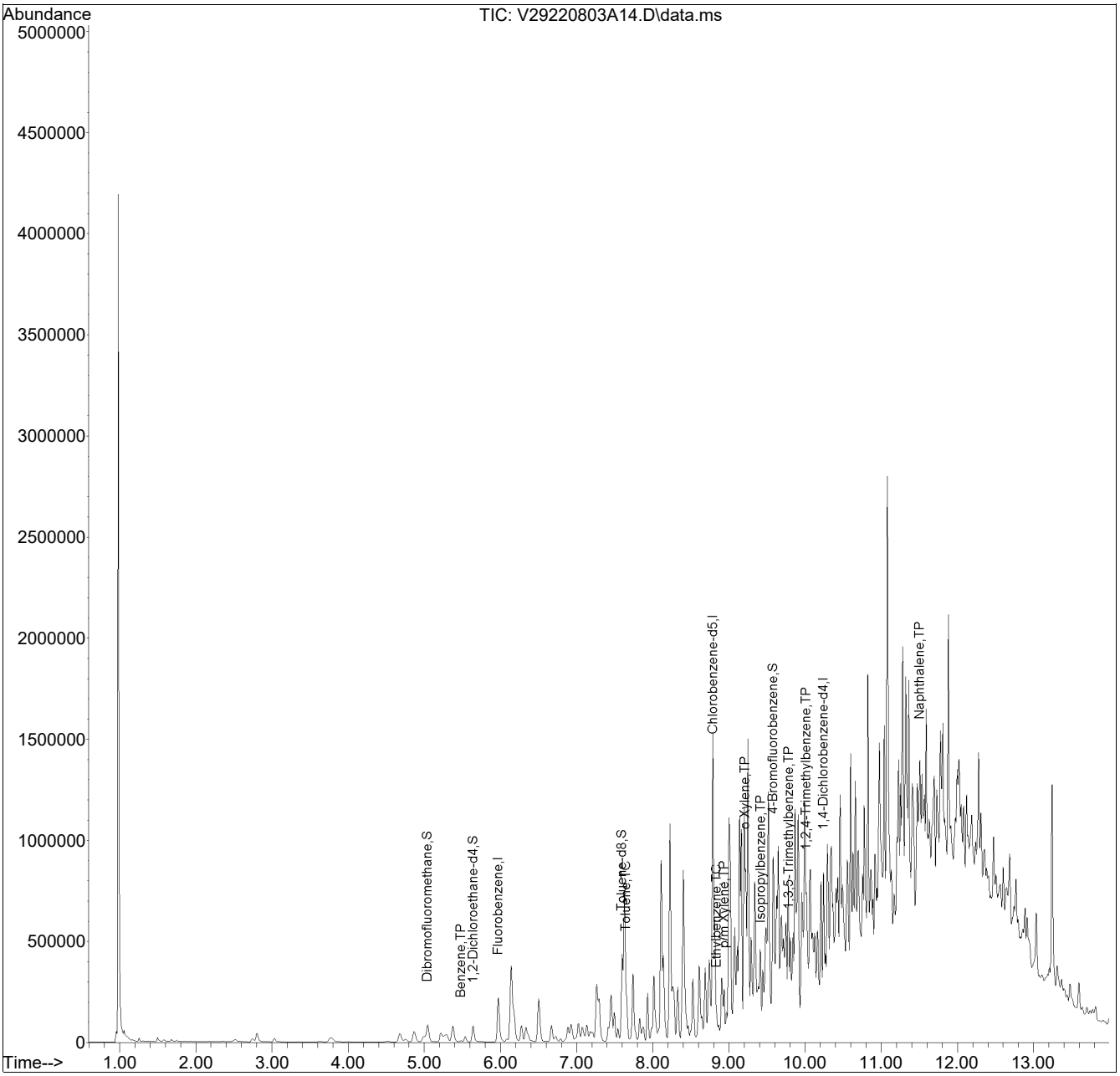


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A14.D
Acq On : 03 Aug 2022 12:06 pm
Operator : VOA129:NLK
Sample : l2241031-09,31,4.79,5,,c
Misc : WG1671352,ICAL19173
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 04 12:45:30 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•

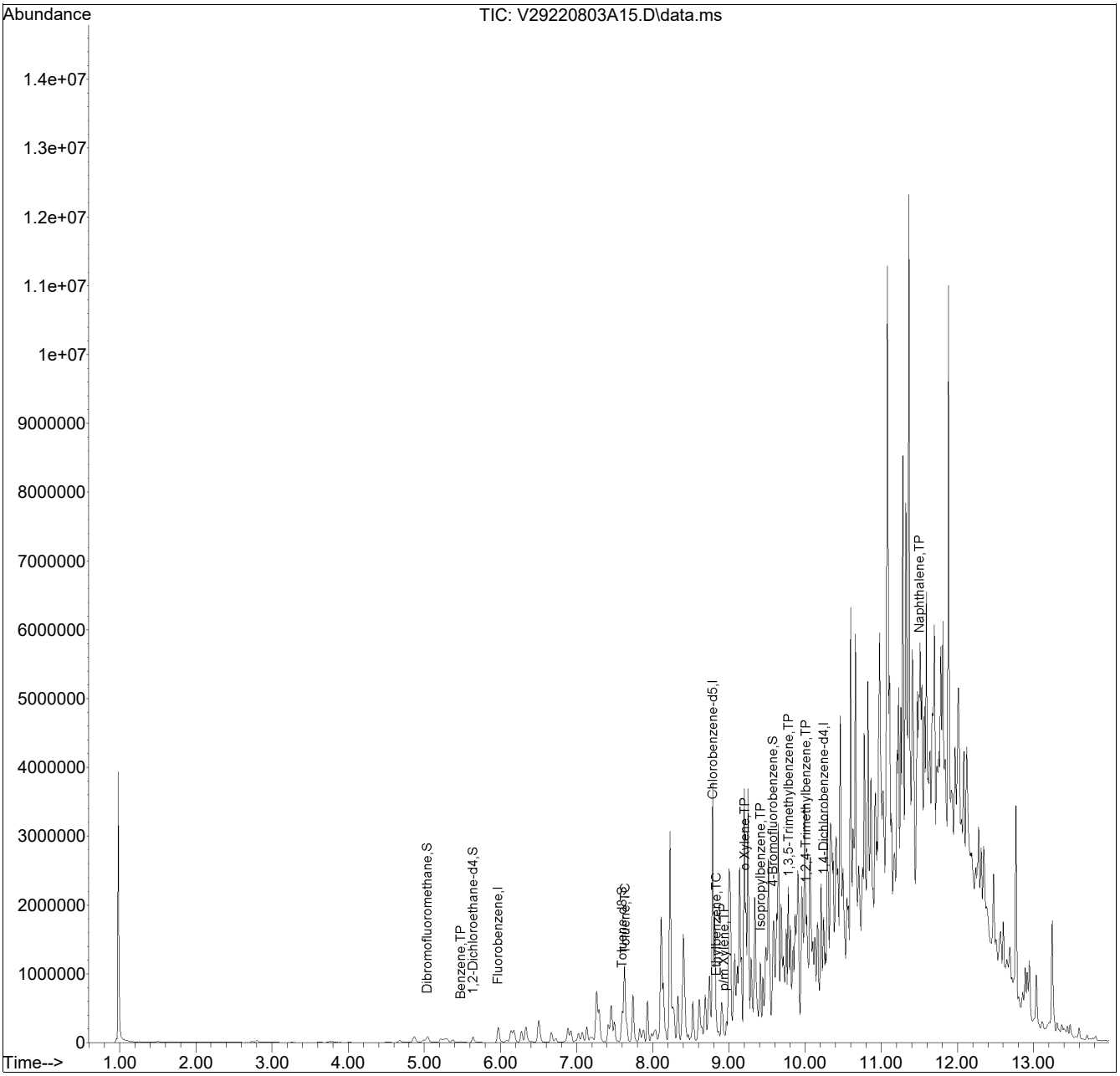


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A15.D
Acq On : 03 Aug 2022 12:27 pm
Operator : VOA129:NLK
Sample : l2241031-10,31,4.51,5,,b
Misc : WG1671352,ICAL19173
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Aug 04 13:23:30 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•

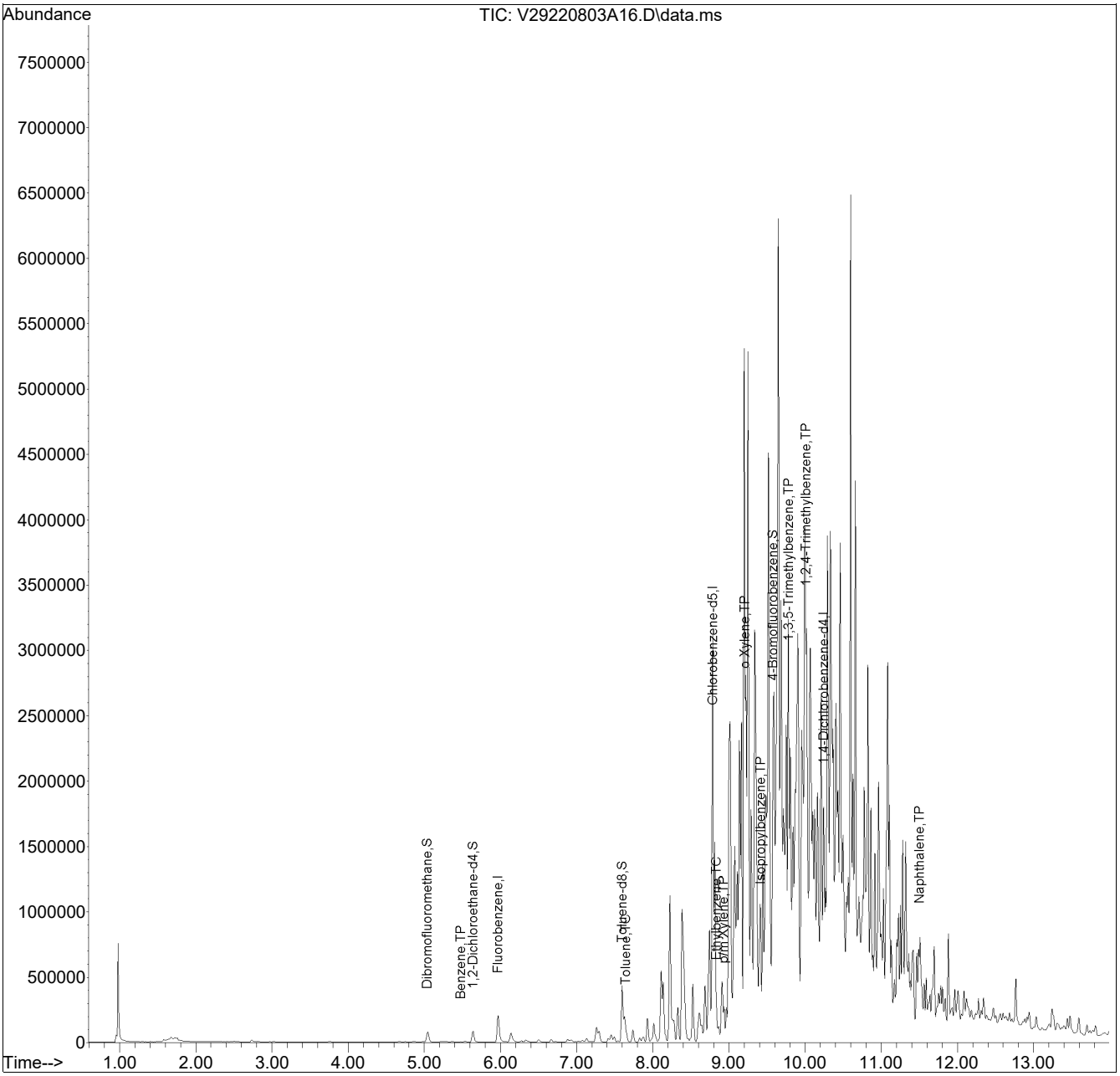


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220803A\
Data File : V29220803A16.D
Acq On : 03 Aug 2022 12:48 pm
Operator : VOA129:NLK
Sample : l2241031-11,31h,2.06,5,0.100,,a
Misc : WG1671356,ICAL19173
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 04 12:45:38 2022
Quant Method : I:\VOLATILES\VOA129\2022\220803A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list03A\V29220803A01.D•



ANALYTICAL REPORT

Lab Number:	L2241290
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/08/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241290-01	GPR792-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:00	08/02/22
L2241290-02	GPR792-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:10	08/02/22
L2241290-03	GPR792-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:20	08/02/22
L2241290-04	GPR792-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:30	08/02/22
L2241290-05	GPR792-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:40	08/02/22
L2241290-06	GPR792-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:50	08/02/22
L2241290-07	GPR792-07-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:00	08/02/22
L2241290-08	GPR793-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:10	08/02/22
L2241290-09	GPR793-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:20	08/02/22
L2241290-10	GPR793-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:30	08/02/22
L2241290-11	GPR793-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:40	08/02/22
L2241290-12	GPR793-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:50	08/02/22
L2241290-13	GPR793-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 12:00	08/02/22
L2241290-14	DUP-49	SOIL	PHILADELPHIA, PA	08/02/22 00:00	08/02/22
L2241290-15	FB-080222-1	WATER	PHILADELPHIA, PA	08/02/22 13:00	08/02/22
L2241290-16	FB-080222-2	WATER	PHILADELPHIA, PA	08/02/22 13:10	08/02/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/08/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-01 D
Client ID: GPR792-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:48
Analyst: JC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	2400		mg/kg	15	1.6	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-02 D
Client ID: GPR792-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:23
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4700		mg/kg	49	5.3	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-03 D
Client ID: GPR792-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:47
Analyst: JC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	12000		mg/kg	88	9.6	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-04 D
Client ID: GPR792-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:11
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	5000		mg/kg	54	5.9	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-05 D
Client ID: GPR792-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:35
Analyst: JC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	8900		mg/kg	65	7.1	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	91		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-06 D
Client ID: GPR792-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:50
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:59
Analyst: JC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4600		mg/kg	70	7.7	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-07 D
Client ID: GPR792-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 14:23
Analyst: JC
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1400		mg/kg	12	1.3	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	89		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-08 D
Client ID: GPR793-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/06/22 02:38
Analyst: AJK
Percent Solids: 95%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	5500		mg/kg	92	10.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-09 D
Client ID: GPR793-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 14:47
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	11000		mg/kg	100	11.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-10 D
Client ID: GPR793-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:11
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	15000		mg/kg	120	14.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-11 D
Client ID: GPR793-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:35
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	14000		mg/kg	110	12.	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	90		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-12 D
Client ID: GPR793-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:50
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:35
Analyst: JC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1900		mg/kg	9.2	1.0	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-13 D
Client ID: GPR793-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 12:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:59
Analyst: JC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1800		mg/kg	11	1.2	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-14 D
Client ID: DUP-49
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 15:59
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	4700		mg/kg	59	6.4	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-15
Client ID: FB-080222-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 12:42
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241290
Project Number: 200.00135.006
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-16
Client ID: FB-080222-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 13:05
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:47
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 15-16 Batch: WG1671600-5					
Isopropylbenzene	ND		ug/l	0.50	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-07,09-14 Batch: WG1672612-5					
Isopropylbenzene	ND		mg/kg	0.050	0.0054

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	94		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 18:45
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08 Batch: WG1672622-5					
Isopropylbenzene	ND		mg/kg	0.050	0.0054

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 15-16 Batch: WG1671600-3 WG1671600-4								
Isopropylbenzene	94		96		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		112		70-130
Toluene-d8	99		97		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	104		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-07,09-14 Batch: WG1672612-3 WG1672612-4								
Isopropylbenzene	102		99		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83		83		70-130
Toluene-d8	100		95		70-130
4-Bromofluorobenzene	100		99		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08 Batch: WG1672622-3 WG1672622-4								
Isopropylbenzene	115		102		70-130	12		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	106		101		70-130
Dibromofluoromethane	94		89		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-01
Client ID: GPR792-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-02
Client ID: GPR792-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-03
Client ID: GPR792-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.0		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-04
Client ID: GPR792-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-05
Client ID: GPR792-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-06
Client ID: GPR792-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 10:50
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.1		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-07
Client ID: GPR792-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-08
Client ID: GPR793-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.7		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-09
Client ID: GPR793-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.8		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-10
Client ID: GPR793-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-11
Client ID: GPR793-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-12
Client ID: GPR793-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 11:50
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.7		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-13
Client ID: GPR793-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 12:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241290
Report Date: 08/08/22

SAMPLE RESULTS

Lab ID: L2241290-14
Client ID: DUP-49
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.5		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241290

Report Date: 08/08/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-14 QC Batch ID: WG1670716-1 QC Sample: L2241290-01 Client ID: GPR792-01-SS01						
Solids, Total	85.2	85.1	%	0		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-01A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-01B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-01C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-01D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-02A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-02B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-02C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-02D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-03A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-03B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-03C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-03D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-04A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-04B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-04C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-04D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-05A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-05B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-05C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-05D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-06A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-06B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-06C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-06D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-07A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-07B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-07C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-07D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-08A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-08B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-08C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-08D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-09A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-09B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-09C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-09D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-10A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-10B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-10C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-10D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-11A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-11B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-11C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-11D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-12A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-12B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-12C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-12D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-13A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-13B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-13C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241290
Report Date: 08/08/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241290-13D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-14A	Vial MeOH preserved	A	NA		3.5	Y	Absent		PA-8260HLW(14)
L2241290-14B	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-14C	Vial water preserved	A	NA		3.5	Y	Absent	03-AUG-22 12:21	PA-8260HLW(14)
L2241290-14D	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		TS(7)
L2241290-15A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-15B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-15C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16A	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16B	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)
L2241290-16C	Vial HCl preserved	A	NA		3.5	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241290
Project Number:	200.00135.006	**Report Date:**	08/08/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241290

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC

Address: 2427 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cumene	Sample Specific Comments
41290-01	GPR-792-01-SSOI	8/2/22	1000	S	AM	☒	
-02	GPR-792-02-SSOI		1010			☒	
-03	GPR-792-03-SSOI		1020			☒	
-04	GPR-792-04-SSOI		1030			☒	
-05	GPR-792-05-SSOI		1040			☒	
-06	GPR-792-06-SSOI		1050			☒	
-07	GPR-792-07-SSOI		1100			☒	
-08	GPR-793-01-SSOI		1110			☒	
-09	GPR-793-02-SSOI		1120			☒	
-10	GPR-793-03-SSOI	↓	1130	↓	↓	☒	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	STL ADL	8/2/22 14:52
	8/2/22 1900		8/2/22 1800
	8/2/22 2101		8/2/22 2100
	8/3/22		8/3/22 25:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(FRNT) (rev. 8-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241290

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name: Philadelphia Refinery

Project Location: Philadelphia, PA

Project #: 200.00135.006

Project Manager: William Schmidt

ALPHA Quote #: 18599

Report Information — Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Ransom Consulting, LLC

Address: 2127 Hamilton Avenue

Trenton, NJ 08619

Phone: 215-901-4974

Fax:

Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cumene	Sample Specific Comments
41290-11	GPR-793-04-5501	8/2/22	1140	S	AM	☑	
-12	GPR-793-05-5501		1150			☑	
-13	GPR-793-06-5501		1200			☑	
-14	DUP-49		—			☑	
-15	FB-080222-1		1300	W		☑	
-16	FB-080222-2		1310			☑	

Container Type	-	-	G	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	STS AAL	8/2/22 14:52
	8/2/22		8/2/22 18:20
	8/2/22 2100		8/3/22 0940
	8/3/22		8/3/22 2315

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 6-JAN-12)

ANALYTICAL REPORT

Lab Number:	L2241291
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/10/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241291-01	GPR494-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 08:45	08/02/22
L2241291-02	GPR494-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 09:10	08/02/22
L2241291-03	GPR494-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 09:30	08/02/22
L2241291-04	GPR494-04-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:00	08/02/22
L2241291-05	GPR494-05-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:20	08/02/22
L2241291-06	GPR494-06-SS01	SOIL	PHILADELPHIA, PA	08/02/22 10:40	08/02/22
L2241291-07	GPR494-07-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:00	08/02/22
L2241291-08	GPR494-08-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:20	08/02/22
L2241291-09	GPR494-09-SS01	SOIL	PHILADELPHIA, PA	08/02/22 11:30	08/02/22
L2241291-10	GPR1088-01-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:00	08/02/22
L2241291-11	GPR1088-02-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:15	08/02/22
L2241291-12	GPR1088-03-SS01	SOIL	PHILADELPHIA, PA	08/02/22 13:30	08/02/22
L2241291-13	DUP-50	SOIL	PHILADELPHIA, PA	08/02/22 00:00	08/02/22
L2241291-14	FB-080222-3	WATER	PHILADELPHIA, PA	08/02/22 13:35	08/02/22
L2241291-15	FB-080222-4	WATER	PHILADELPHIA, PA	08/02/22 13:40	08/02/22
L2241291-16	TB-080222	WATER	PHILADELPHIA, PA	08/02/22 00:00	08/02/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241291-01: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (48%) and the surrogate recovery for 4-bromofluorobenzene (153%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis; however, since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. The results of both analyses are reported.

L2241291-02: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (47%) and the surrogate recovery for 4-bromofluorobenzene (207%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. A high-level analysis was performed, and those results are also reported.

L2241291-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (201%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-04: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (33%) and the surrogate recoveries for toluene-d8 (133%) and 4-bromofluorobenzene (254%) were outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (44%) and 4-bromofluorobenzene (171%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

L2241291-05D: The sample has elevated detection limits due to the dilution required by the elevated

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
Project Number:	200.00135.006	**Report Date:**	08/10/22

Case Narrative (continued)

concentrations of non-target compounds in the sample.

L2241291-05D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (220%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-06: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (149%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-07: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (144%) and 4-bromofluorobenzene (834%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2241291-08: The surrogate recovery for 4-bromofluorobenzene (137%) was outside the acceptance criteria; however, re-analysis achieved the following results: 1,4-dichlorobenzene-d4 (36%) and 4-bromofluorobenzene (134%). The results of both analyses are reported; however, since the IS response was below method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias.

Semivolatile Organics

L2241291-01D and -03D through -06D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2241291-08D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Total Metals

The WG1670927-3 MS recovery for lead (486%), performed on L2241291-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 08/10/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:13
Analyst: JC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.0040		mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.033		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	0.036		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.21		mg/kg	0.0024	0.00066	1
o-Xylene	0.095		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.30		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.054		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.16		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.63	E	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**153**	Q	70-130
Dibromofluoromethane	76		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 22:38
Analyst: AJK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.099	0.0099	1
Benzene	ND		mg/kg	0.025	0.0082	1
1,2-Dichloroethane	ND		mg/kg	0.049	0.013	1
Toluene	ND		mg/kg	0.049	0.027	1
1,2-Dibromoethane	ND		mg/kg	0.025	0.014	1
Ethylbenzene	0.022	J	mg/kg	0.049	0.0070	1
p/m-Xylene	0.078	J	mg/kg	0.099	0.028	1
o-Xylene	0.038	J	mg/kg	0.049	0.014	1
Xylenes, Total	0.12	J	mg/kg	0.049	0.014	1
Isopropylbenzene	ND		mg/kg	0.049	0.0054	1
1,3,5-Trimethylbenzene	0.060	J	mg/kg	0.099	0.0095	1
1,2,4-Trimethylbenzene	0.22		mg/kg	0.099	0.016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 10:40
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.14	0.014	1
Benzene	0.037		mg/kg	0.036	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.072	0.018	1
Toluene	0.047	J	mg/kg	0.072	0.039	1
1,2-Dibromoethane	ND		mg/kg	0.036	0.021	1
Ethylbenzene	0.064	J	mg/kg	0.072	0.010	1
p/m-Xylene	0.078	J	mg/kg	0.14	0.040	1
o-Xylene	0.14		mg/kg	0.072	0.021	1
Xylenes, Total	0.22	J	mg/kg	0.072	0.021	1
Isopropylbenzene	0.63		mg/kg	0.072	0.0078	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.14	0.014	1
1,2,4-Trimethylbenzene	0.061	J	mg/kg	0.14	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 22:58
Analyst: AJK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0037	0.00037	1
Benzene	0.0041		mg/kg	0.00092	0.00031	1
1,2-Dichloroethane	ND		mg/kg	0.0018	0.00048	1
Toluene	0.0086		mg/kg	0.0018	0.0010	1
1,2-Dibromoethane	ND		mg/kg	0.00092	0.00054	1
Ethylbenzene	0.0074		mg/kg	0.0018	0.00026	1
p/m-Xylene	0.0054		mg/kg	0.0037	0.0010	1
o-Xylene	0.025		mg/kg	0.0018	0.00054	1
Xylenes, Total	0.030		mg/kg	0.0018	0.00054	1
Isopropylbenzene	0.072		mg/kg	0.0018	0.00020	1
1,3,5-Trimethylbenzene	0.00036	J	mg/kg	0.0037	0.00036	1
1,2,4-Trimethylbenzene	0.0053		mg/kg	0.0037	0.00062	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	127		70-130
4-Bromofluorobenzene	**207**	Q	70-130
Dibromofluoromethane	79		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 23:40
Analyst: AJK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.00040	J	mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00096	0.00025	1
Toluene	0.00082	J	mg/kg	0.00096	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	0.0012		mg/kg	0.00096	0.00014	1
p/m-Xylene	0.0064		mg/kg	0.0019	0.00054	1
o-Xylene	0.0068		mg/kg	0.00096	0.00028	1
Xylenes, Total	0.013		mg/kg	0.00096	0.00028	1
Isopropylbenzene	0.034		mg/kg	0.00096	0.00010	1
1,3,5-Trimethylbenzene	0.00040	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.0017	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	125		70-130
4-Bromofluorobenzene	**201**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 11:33
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00021	1
Benzene	0.0018		mg/kg	0.00051	0.00017	1
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026	1
Toluene	0.0050		mg/kg	0.0010	0.00056	1
1,2-Dibromoethane	ND		mg/kg	0.00051	0.00030	1
Ethylbenzene	0.0042		mg/kg	0.0010	0.00014	1
p/m-Xylene	0.0096		mg/kg	0.0020	0.00057	1
o-Xylene	0.019		mg/kg	0.0010	0.00030	1
Xylenes, Total	0.029		mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.013		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	0.0010	J	mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	0.0057		mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	**133**	Q	70-130
4-Bromofluorobenzene	**254**	Q	70-130
Dibromofluoromethane	116		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04 R
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 23:19
Analyst: AJK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.00036	J	mg/kg	0.00061	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0011	J	mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00061	0.00036	1
Ethylbenzene	0.0010	J	mg/kg	0.0012	0.00017	1
p/m-Xylene	0.0027		mg/kg	0.0024	0.00068	1
o-Xylene	0.0041		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.0068		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0072		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0074		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0010	J	mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**171**	Q	70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05 D
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:00
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.27	0.027	2
Benzene	ND		mg/kg	0.068	0.022	2
1,2-Dichloroethane	ND		mg/kg	0.14	0.035	2
Toluene	0.089	J	mg/kg	0.14	0.074	2
1,2-Dibromoethane	ND		mg/kg	0.068	0.040	2
Ethylbenzene	0.046	J	mg/kg	0.14	0.019	2
p/m-Xylene	0.16	J	mg/kg	0.27	0.076	2
o-Xylene	0.086	J	mg/kg	0.14	0.040	2
Xylenes, Total	0.25	J	mg/kg	0.14	0.040	2
Isopropylbenzene	2.1		mg/kg	0.14	0.015	2
1,3,5-Trimethylbenzene	ND		mg/kg	0.27	0.026	2
1,2,4-Trimethylbenzene	0.15	J	mg/kg	0.27	0.045	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	**220**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 15:30
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0022	0.00022	1
Benzene	0.00059		mg/kg	0.00056	0.00018	1
1,2-Dichloroethane	ND		mg/kg	0.0011	0.00029	1
Toluene	0.0012		mg/kg	0.0011	0.00061	1
1,2-Dibromoethane	ND		mg/kg	0.00056	0.00033	1
Ethylbenzene	0.00067	J	mg/kg	0.0011	0.00016	1
p/m-Xylene	0.0032		mg/kg	0.0022	0.00062	1
o-Xylene	0.0052		mg/kg	0.0011	0.00032	1
Xylenes, Total	0.0084		mg/kg	0.0011	0.00032	1
Isopropylbenzene	0.0091		mg/kg	0.0011	0.00012	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0022	0.00022	1
1,2,4-Trimethylbenzene	0.0020	J	mg/kg	0.0022	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	**149**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 12:53
Analyst: JC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.00050	J	mg/kg	0.00059	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00030	1
Toluene	0.0043		mg/kg	0.0012	0.00064	1
1,2-Dibromoethane	ND		mg/kg	0.00059	0.00035	1
Ethylbenzene	0.0028		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.041		mg/kg	0.0024	0.00066	1
o-Xylene	0.020		mg/kg	0.0012	0.00034	1
Xylenes, Total	0.061		mg/kg	0.0012	0.00034	1
Isopropylbenzene	0.14		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0025		mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.018		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	130		70-130
Toluene-d8	**144**	Q	70-130
4-Bromofluorobenzene	**834**	Q	70-130
Dibromofluoromethane	106		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/05/22 13:20
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	0.0052		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	0.0044		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	0.0030		mg/kg	0.0014	0.00020	1
p/m-Xylene	0.012		mg/kg	0.0028	0.00078	1
o-Xylene	0.0075		mg/kg	0.0014	0.00040	1
Xylenes, Total	0.020		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.0029		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	0.0039		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	0.012		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	108		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08 R
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 21:34
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0024	0.00024	1
Benzene	0.016		mg/kg	0.00060	0.00020	1
1,2-Dichloroethane	ND		mg/kg	0.0012	0.00031	1
Toluene	0.0057		mg/kg	0.0012	0.00066	1
1,2-Dibromoethane	ND		mg/kg	0.00060	0.00035	1
Ethylbenzene	0.0036		mg/kg	0.0012	0.00017	1
p/m-Xylene	0.012		mg/kg	0.0024	0.00068	1
o-Xylene	0.0083		mg/kg	0.0012	0.00035	1
Xylenes, Total	0.020		mg/kg	0.0012	0.00035	1
Isopropylbenzene	0.0019		mg/kg	0.0012	0.00013	1
1,3,5-Trimethylbenzene	0.0022	J	mg/kg	0.0024	0.00023	1
1,2,4-Trimethylbenzene	0.0063		mg/kg	0.0024	0.00040	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	**134**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 21:54
Analyst: NLK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00041	1
Ethylbenzene	ND		mg/kg	0.0014	0.00020	1
p/m-Xylene	ND		mg/kg	0.0028	0.00078	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	ND		mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 18:57
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 10:28
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:04
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 10:52
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-16
Client ID: TB-080222
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:11
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-16
Client ID: TB-080222
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 11:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2241291

Project Number: 200.00135.006 **Report Date:** 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 08:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 14-16 Batch: WG1671346-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/08/22 17:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 14-16 Batch: WG1672421-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 16:59
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1672584-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 16:59
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-04 Batch: WG1672587-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02,05 Batch: WG1672595-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,04,07 Batch: WG1672597-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 06 Batch: WG1672815-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 18:52
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08-09 Batch: WG1672860-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/05/22 08:48
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 08 Batch: WG1672867-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 14-16 Batch: WG1671346-3 WG1671346-4								
Methyl tert butyl ether	87		89		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	100		110		70-130	10		20
Ethylbenzene	100		110		70-130	10		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	100		105		70-130	5		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	100		110		64-130	10		20
1,2,4-Trimethylbenzene	100		110		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		92		70-130
Toluene-d8	102		100		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	103		102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 14-16 Batch: WG1672421-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1672584-3 WG1672584-4								
Methyl tert butyl ether	91		90		66-130	1		30
Benzene	98		95		70-130	3		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	96		94		70-130	2		30
1,2-Dibromoethane	99		98		70-130	1		30
Ethylbenzene	101		98		70-130	3		30
p/m-Xylene	100		97		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		99		70-130	1		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		99		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-04 Batch: WG1672587-3 WG1672587-4								
Methyl tert butyl ether	91		90		66-130	1		30
Benzene	98		95		70-130	3		30
1,2-Dichloroethane	94		93		70-130	1		30
Toluene	96		94		70-130	2		30
1,2-Dibromoethane	99		98		70-130	1		30
Ethylbenzene	101		98		70-130	3		30
p/m-Xylene	100		97		70-130	3		30
o-Xylene	99		97		70-130	2		30
Isopropylbenzene	100		98		70-130	2		30
1,3,5-Trimethylbenzene	100		99		70-130	1		30
1,2,4-Trimethylbenzene	101		99		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		99		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	89		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02,05 Batch: WG1672595-3 WG1672595-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,04,07 Batch: WG1672597-3 WG1672597-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 06 Batch: WG1672815-3 WG1672815-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08-09 Batch: WG1672860-3 WG1672860-4								
Methyl tert butyl ether	93		93		66-130	0		30
Benzene	91		90		70-130	1		30
1,2-Dichloroethane	90		90		70-130	0		30
Toluene	84		83		70-130	1		30
1,2-Dibromoethane	90		89		70-130	1		30
Ethylbenzene	90		88		70-130	2		30
p/m-Xylene	90		88		70-130	2		30
o-Xylene	91		89		70-130	2		30
Isopropylbenzene	92		92		70-130	0		30
1,3,5-Trimethylbenzene	91		92		70-130	1		30
1,2,4-Trimethylbenzene	90		90		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		104		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	99		101		70-130
Dibromofluoromethane	99		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 08 Batch: WG1672867-3 WG1672867-4								
Methyl tert butyl ether	91		91		66-130	0		30
Benzene	97		94		70-130	3		30
1,2-Dichloroethane	106		104		70-130	2		30
Toluene	100		96		70-130	4		30
1,2-Dibromoethane	99		97		70-130	2		30
Ethylbenzene	101		97		70-130	4		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	103		99		70-130	4		30
1,3,5-Trimethylbenzene	103		99		70-130	4		30
1,2,4-Trimethylbenzene	102		97		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112		113		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	100		102		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01 D
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 13:44
Analyst: JG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.3	J	mg/kg	1.8	0.22	10
Fluorene	5.2		mg/kg	1.8	0.18	10
Phenanthrene	30.		mg/kg	1.1	0.22	10
Anthracene	4.8		mg/kg	1.1	0.35	10
Pyrene	11.		mg/kg	1.1	0.18	10
Benzo(a)anthracene	9.7		mg/kg	1.1	0.20	10
Chrysene	13.		mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	3.7		mg/kg	1.1	0.30	10
Benzo(a)pyrene	7.7		mg/kg	1.4	0.44	10
Benzo(ghi)perylene	2.5		mg/kg	1.4	0.21	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	77		30-120
4-Terphenyl-d14	69		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02 D
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 14:32
Analyst: JG
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.4	J	mg/kg	1.9	0.23	10
Fluorene	9.0		mg/kg	1.9	0.18	10
Phenanthrene	71.		mg/kg	1.1	0.23	10
Anthracene	7.1		mg/kg	1.1	0.36	10
Pyrene	39.		mg/kg	1.1	0.19	10
Benzo(a)anthracene	20.		mg/kg	1.1	0.21	10
Chrysene	34.		mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	8.4		mg/kg	1.1	0.32	10
Benzo(a)pyrene	18.		mg/kg	1.5	0.46	10
Benzo(ghi)perylene	7.0		mg/kg	1.5	0.22	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03 D
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 01:40
Analyst: CMM
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.91	0.11	5
Fluorene	4.8		mg/kg	0.91	0.088	5
Phenanthrene	29.		mg/kg	0.54	0.11	5
Anthracene	4.0		mg/kg	0.54	0.18	5
Pyrene	20.		mg/kg	0.54	0.090	5
Benzo(a)anthracene	7.8		mg/kg	0.54	0.10	5
Chrysene	14.		mg/kg	0.54	0.094	5
Benzo(b)fluoranthene	3.6		mg/kg	0.54	0.15	5
Benzo(a)pyrene	7.4		mg/kg	0.72	0.22	5
Benzo(ghi)perylene	2.4		mg/kg	0.72	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04 D
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 02:03
Analyst: CMM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.36	J	mg/kg	0.93	0.11	5
Fluorene	0.57	J	mg/kg	0.93	0.091	5
Phenanthrene	1.1		mg/kg	0.56	0.11	5
Anthracene	0.59		mg/kg	0.56	0.18	5
Pyrene	8.6		mg/kg	0.56	0.093	5
Benzo(a)anthracene	3.9		mg/kg	0.56	0.10	5
Chrysene	9.7		mg/kg	0.56	0.097	5
Benzo(b)fluoranthene	4.6		mg/kg	0.56	0.16	5
Benzo(a)pyrene	7.4		mg/kg	0.75	0.23	5
Benzo(ghi)perylene	3.5		mg/kg	0.75	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	67		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05 D
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 14:55
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.94	J	mg/kg	2.0	0.24	10
Fluorene	8.1		mg/kg	2.0	0.20	10
Phenanthrene	36.		mg/kg	1.2	0.24	10
Anthracene	4.7		mg/kg	1.2	0.39	10
Pyrene	15.		mg/kg	1.2	0.20	10
Benzo(a)anthracene	11.		mg/kg	1.2	0.23	10
Chrysene	16.		mg/kg	1.2	0.21	10
Benzo(b)fluoranthene	3.9		mg/kg	1.2	0.34	10
Benzo(a)pyrene	8.7		mg/kg	1.6	0.49	10
Benzo(ghi)perylene	2.7		mg/kg	1.6	0.24	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	74		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06 D
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 15:18
Analyst: JG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.42	J	mg/kg	1.8	0.22	10
Fluorene	1.4	J	mg/kg	1.8	0.17	10
Phenanthrene	7.6		mg/kg	1.1	0.22	10
Anthracene	1.8		mg/kg	1.1	0.35	10
Pyrene	2.3		mg/kg	1.1	0.18	10
Benzo(a)anthracene	2.8		mg/kg	1.1	0.20	10
Chrysene	3.1		mg/kg	1.1	0.18	10
Benzo(b)fluoranthene	1.2		mg/kg	1.1	0.30	10
Benzo(a)pyrene	2.1		mg/kg	1.4	0.43	10
Benzo(ghi)perylene	0.75	J	mg/kg	1.4	0.21	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	81		30-120
4-Terphenyl-d14	72		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07 D
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:11
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.98	0.12	5
Fluorene	6.6		mg/kg	0.98	0.095	5
Phenanthrene	30.		mg/kg	0.58	0.12	5
Anthracene	2.8		mg/kg	0.58	0.19	5
Pyrene	7.8		mg/kg	0.58	0.097	5
Benzo(a)anthracene	3.5		mg/kg	0.58	0.11	5
Chrysene	7.0		mg/kg	0.58	0.10	5
Benzo(b)fluoranthene	1.1		mg/kg	0.58	0.16	5
Benzo(a)pyrene	2.7		mg/kg	0.78	0.24	5
Benzo(ghi)perylene	0.70	J	mg/kg	0.78	0.11	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	54		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08 D
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:33
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	4.8	J	mg/kg	6.7	0.81	35
Fluorene	11.		mg/kg	6.7	0.65	35
Phenanthrene	110		mg/kg	4.0	0.81	35
Anthracene	23.		mg/kg	4.0	1.3	35
Pyrene	130		mg/kg	4.0	0.66	35
Benzo(a)anthracene	71.		mg/kg	4.0	0.75	35
Chrysene	170		mg/kg	4.0	0.70	35
Benzo(b)fluoranthene	28.		mg/kg	4.0	1.1	35
Benzo(a)pyrene	54.		mg/kg	5.4	1.6	35
Benzo(ghi)perylene	18.		mg/kg	5.4	0.79	35

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/09/22 03:56
Analyst: CMM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.059	J	mg/kg	0.20	0.024	1
Fluorene	0.030	J	mg/kg	0.20	0.019	1
Phenanthrene	0.45		mg/kg	0.12	0.024	1
Anthracene	0.13		mg/kg	0.12	0.039	1
Pyrene	0.84		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.73		mg/kg	0.12	0.022	1
Chrysene	0.70		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	1.2		mg/kg	0.12	0.033	1
Benzo(a)pyrene	1.1		mg/kg	0.16	0.048	1
Benzo(ghi)perylene	0.51		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	65		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:33
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	64		15-120
4-Terphenyl-d14	49		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:49
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	0.02	J	ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	68		15-120
4-Terphenyl-d14	52		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/22 23:47
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-09 Batch: WG1671002-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	103		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/08/22 12:17
Analyst: AH

Extraction Method: EPA 3510C
Extraction Date: 08/06/22 11:24

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 14-15 Batch: WG1672057-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	53		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-09 Batch: WG1671002-2 WG1671002-3								
Naphthalene	83		77		40-140	8		50
Fluorene	91		84		40-140	8		50
Phenanthrene	81		76		40-140	6		50
Anthracene	87		80		40-140	8		50
Pyrene	83		76		35-142	9		50
Benzo(a)anthracene	93		87		40-140	7		50
Chrysene	88		84		40-140	5		50
Benzo(b)fluoranthene	113		103		40-140	9		50
Benzo(a)pyrene	114		108		40-140	5		50
Benzo(ghi)perylene	92		87		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	94		84		23-120
2-Fluorobiphenyl	83		77		30-120
4-Terphenyl-d14	99		90		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 14-15 Batch: WG1672057-2 WG1672057-3								
Naphthalene	76		73		40-140	4		40
Fluorene	76		73		40-140	4		40
Phenanthrene	76		71		40-140	7		40
Anthracene	74		70		40-140	6		40
Pyrene	67		63		26-127	6		40
Benzo(a)anthracene	79		73		40-140	8		40
Chrysene	85		80		40-140	6		40
Benzo(b)fluoranthene	88		78		40-140	12		40
Benzo(a)pyrene	76		68		40-140	11		40
Benzo(ghi)perylene	82		79		40-140	4		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80		76		23-120
2-Fluorobiphenyl	72		67		15-120
4-Terphenyl-d14	58		54		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	517		mg/kg	2.11	0.113	1	08/03/22 23:50	08/09/22 19:10	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	90.3		mg/kg	2.21	0.118	1	08/03/22 23:50	08/09/22 18:56	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.9		mg/kg	2.12	0.114	1	08/03/22 23:50	08/09/22 19:01	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	238		mg/kg	2.14	0.115	1	08/03/22 23:50	08/09/22 19:06	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	32.0		mg/kg	2.37	0.127	1	08/03/22 23:50	08/09/22 19:43	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	78.1		mg/kg	2.06	0.111	1	08/03/22 23:50	08/09/22 19:48	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	19.3		mg/kg	2.28	0.122	1	08/03/22 23:50	08/09/22 19:53	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	114		mg/kg	2.26	0.121	1	08/03/22 23:50	08/09/22 19:57	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	70.9		mg/kg	2.36	0.127	1	08/03/22 23:50	08/09/22 20:02	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:45	EPA 3005A	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241291
Project Number: 200.00135.006
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:50	EPA 3005A	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-09 Batch: WG1670927-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/03/22 23:50	08/09/22 18:47	1,6010D	NB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 14-15 Batch: WG1670990-1										
Lead, Total	ND		mg/l	0.010	0.003	1	08/04/22 02:44	08/08/22 14:27	1,6010D	EW

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 Batch: WG1670927-2 SRM Lot Number: D113-540								
Lead, Total	81		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 14-15 Batch: WG1670990-2								
Lead, Total	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241291
Report Date: 08/10/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1670927-3 QC Sample: L2241291-01 Client ID: GPR494-01-SS01												
Lead, Total	517	45.2	737	**486**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 14-15 QC Batch ID: WG1670990-3 QC Sample: L2241354-01 Client ID: MS Sample												
Lead, Total	0.004J	0.53	0.507	96		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1670927-4 QC Sample: L2241291-01 Client ID: GPR494-01-SS01						
Lead, Total	517	569	mg/kg	10		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-01
Client ID: GPR494-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 08:45
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-02
Client ID: GPR494-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 09:10
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-03
Client ID: GPR494-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 09:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.5		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-04
Client ID: GPR494-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.7		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-05
Client ID: GPR494-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-06
Client ID: GPR494-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 10:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.9		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-07
Client ID: GPR494-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-08
Client ID: GPR494-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:20
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/03/22 11:54	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-09
Client ID: GPR494-09-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 11:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.2		%	0.100	NA	1	-	08/03/22 12:12	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-10
Client ID: GPR1088-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/02/22 13:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.5		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-11
Client ID: GPR1088-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 13:15
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-12
Client ID: GPR1088-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 13:30
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-13
Client ID: DUP-50
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/02/22 00:00
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	8.0		SU	-	NA	1	-	08/05/22 10:34	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-14
Client ID: FB-080222-3
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/02/22 13:35
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.0		SU	-	NA	1	-	08/03/22 20:36	1,9040C	AS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241291
Report Date: 08/10/22

SAMPLE RESULTS

Lab ID: L2241291-15
Client ID: FB-080222-4
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/02/22 13:40
Date Received: 08/02/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.8		SU	-	NA	1	-	08/03/22 20:36	1,9040C	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 14-15 Batch: WG1670909-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 10-13 Batch: WG1671686-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241291

Report Date: 08/10/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG1670713-1 QC Sample: L2241331-01 Client ID: DUP Sample						
Solids, Total	84.5	85.1	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 09 QC Batch ID: WG1670716-1 QC Sample: L2241290-01 Client ID: DUP Sample						
Solids, Total	85.2	85.1	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 14-15 QC Batch ID: WG1670909-2 QC Sample: L2240789-01 Client ID: DUP Sample						
pH	6.7	6.6	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 10-13 QC Batch ID: WG1671686-2 QC Sample: L2241901-01 Client ID: DUP Sample						
pH	3.8	3.7	SU	3		5

Project Name: PHILADELPHIA REFINERY
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-01A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241291-01B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-01C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-01D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-01E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-01F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-02A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241291-02B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-02C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260H(14),PA-8260HLW(14)
L2241291-02D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-02E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-02F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-03A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-03B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-03C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-03D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-03E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-03F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-04A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-04B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-04C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-04D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-04F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-05A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-05B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-05C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-05D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-05F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-06A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-06B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-06C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-06D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-06E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-06F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-07A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-07B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-07C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-07D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-07E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-07F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-08A	Vial MeOH preserved	C	NA		3.6	Y	Absent		PA-8260HLW(14)
L2241291-08B	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-08C	Vial water preserved	C	NA		3.6	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-08D	Plastic 2oz unpreserved for TS	C	NA		3.6	Y	Absent		TS(7)
L2241291-08E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		3.6	Y	Absent		PB-TI(180)
L2241291-08F	Glass 120ml/4oz unpreserved	C	NA		3.6	Y	Absent		PA-PAH(14)
L2241291-09A	Vial MeOH preserved	B	NA		3.0	Y	Absent		PA-8260HLW(14)
L2241291-09B	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-09C	Vial water preserved	B	NA		3.0	Y	Absent	03-AUG-22 12:19	PA-8260HLW(14)
L2241291-09D	Plastic 2oz unpreserved for TS	B	NA		3.0	Y	Absent		TS(7)
L2241291-09E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.0	Y	Absent		PB-TI(180)
L2241291-09F	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PA-PAH(14)
L2241291-10A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-11A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-12A	Glass 120ml/4oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-13A	Glass 250ml/8oz unpreserved	B	NA		3.0	Y	Absent		PH-9045(1)
L2241291-14A	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14B	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14C	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-14D	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-14E	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-14F	Plastic 60ml unpreserved	C	7	7	3.6	Y	Absent		PH-9040(1)
L2241291-14G	Plastic 250ml HNO3 preserved	C	<2	<2	3.6	Y	Absent		PB-TI(180)
L2241291-14H	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-14I	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-15A	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15B	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15C	Vial HCl preserved	C	NA		3.6	Y	Absent		PA-8260(14)
L2241291-15D	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-15E	Vial Na2S2O3 preserved	C	NA		3.6	Y	Absent		8011(14)
L2241291-15F	Plastic 60ml unpreserved	C	7	7	3.6	Y	Absent		PH-9040(1)
L2241291-15G	Plastic 250ml HNO3 preserved	C	<2	<2	3.6	Y	Absent		PB-TI(180)
L2241291-15H	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-15I	Amber 250ml unpreserved	C	7	7	3.6	Y	Absent		PA-PAHSIM-LVI(7)
L2241291-16A	Vial HCl preserved	B	NA		3.0	Y	Absent		PA-8260(14)
L2241291-16B	Vial HCl preserved	B	NA		3.0	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241291-16C	Vial Na2S2O3 preserved	B	NA		3.0	Y	Absent		8011(14)
L2241291-16D	Vial Na2S2O3 preserved	B	NA		3.0	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241291
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241291

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-5
PAH

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
41291-01	GPR494-01-5501	8/2	0845	SS	TS	
-02	GPR494-02-5501		0910			
-03	GPR494-03-5501		0930			
-04	GPR-494-04-5501		1000			
-05	GPR494-05-5501		1020			
-06	GPR494-06-5501		1040			
-07	GPR494-07-5501		1100			
-08	GPR494-08-5501		1120			
-09	GPR494-09-5501		1130			
-10	GPR1088-01-5501		1300			

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/22	ST - AAI	8/2/22 14:52
	8/2/22 1600		8/2/22 1600
	8/2/22		8/2/22 2100
	8/3/22		8/4/22 23:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(HW)
(rev. 3-JAN-12)

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/3/22

ALPHA Job #: L2241291

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	SHORT LIST 1-5	pH	VOC Positive +5C	EDB (8011)	Sample Specific Comments	TOTAL # BOTTLES
41291-1	GPR1088-02-5501	8/2	1315	S	TS	☐	☑	☐	☐		
-12	GPR1088-03-5501		1330	S	TS	☐	☑	☐	☐		
-13	DUP-50		-	S	TS	☐	☑	☐	☐		
-14	FB-080222-3		1335	W	TS	☑	☑	☑	☑		
-15	FB-080222-4		1340	W	TS	☑	☑	☑	☑		
-16	TB-080222		-	W	TS	☐	☐	☑	☑		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		
						☐	☐	☐	☐		

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22		8/3/22 14:52
	8/3/22		8/3/22 2100
	8/3/22 400		8/3/22 2400
	8/3/22		8/4/22 23:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 31-01(H-L) Rev. 5-JAN-17

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

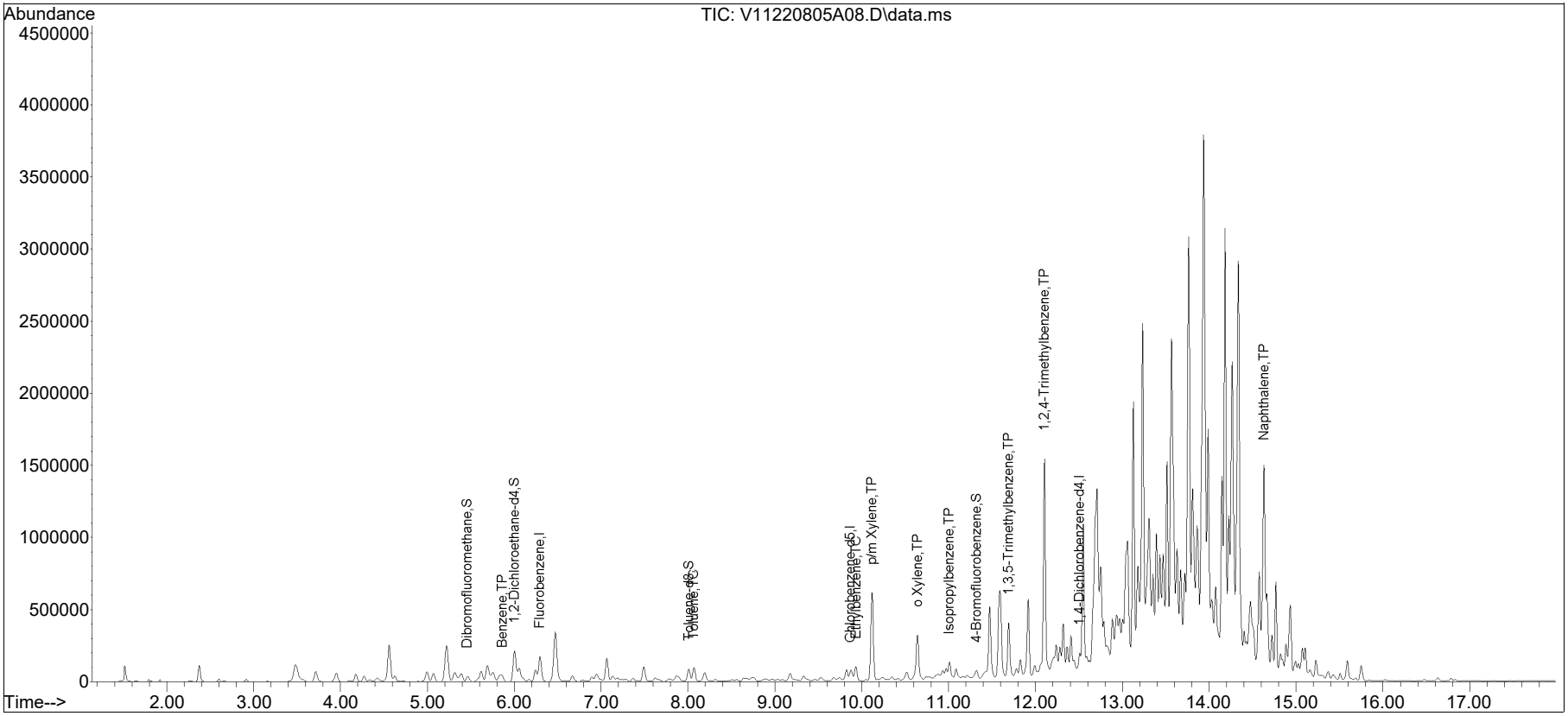
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A08.D
Acq On : 05 Aug 2022 10:13 am
Operator : VOA111:JC
Sample : L2241291-01,31,4.67,5,,B
Misc : WG1672597,ICAL19072
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 05 13:21:07 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•

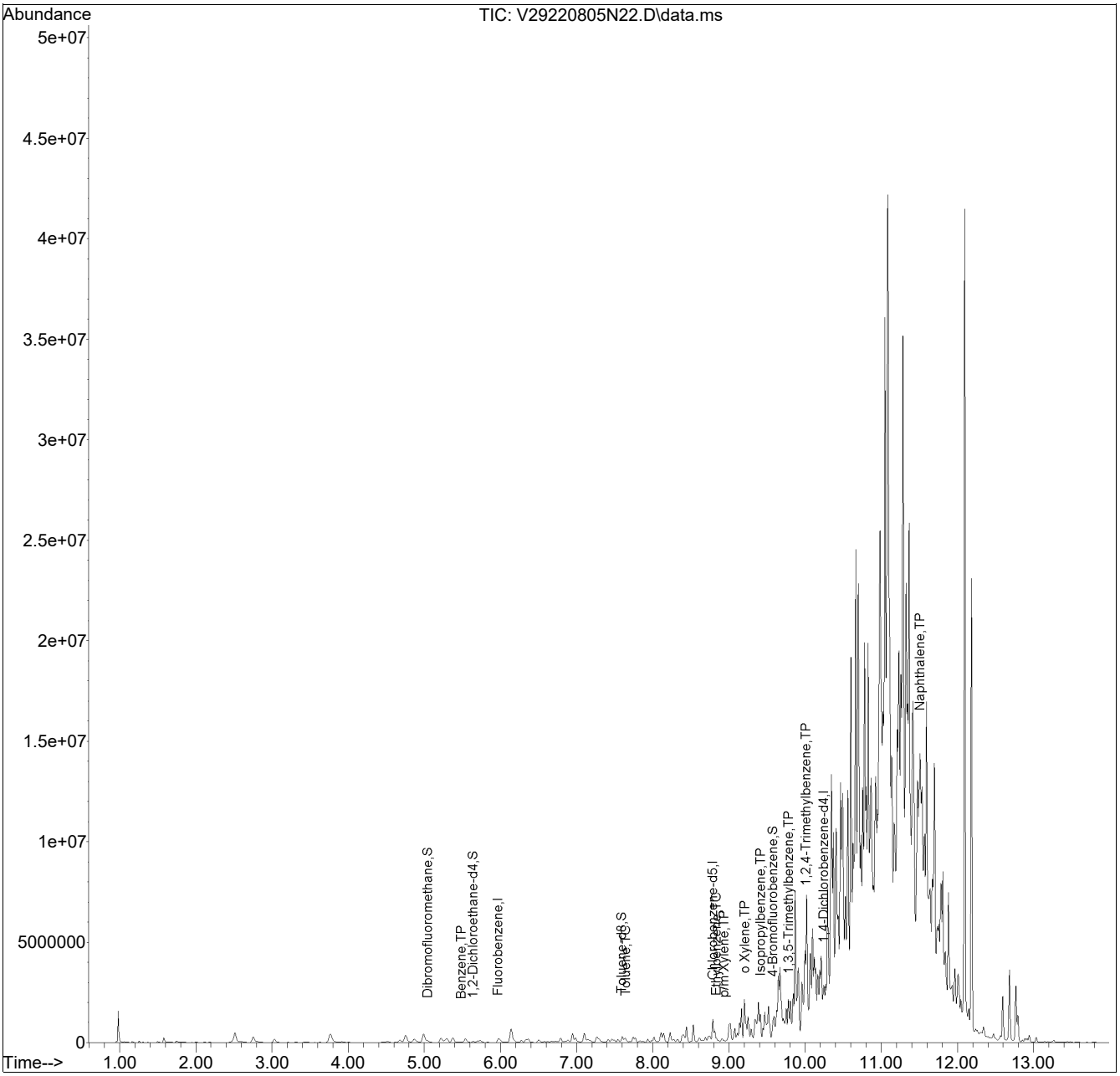


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220805N\
Data File : V29220805N22.D
Acq On : 05 Aug 2022 10:58 pm
Operator : VOA129:AJK
Sample : l2241291-02,31,3.08,5,,c
Misc : WG1672587,ICAL19173
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 07 17:29:18 2022
Quant Method : I:\VOLATILES\VOA129\2022\220805N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05N\V29220805N01.D•

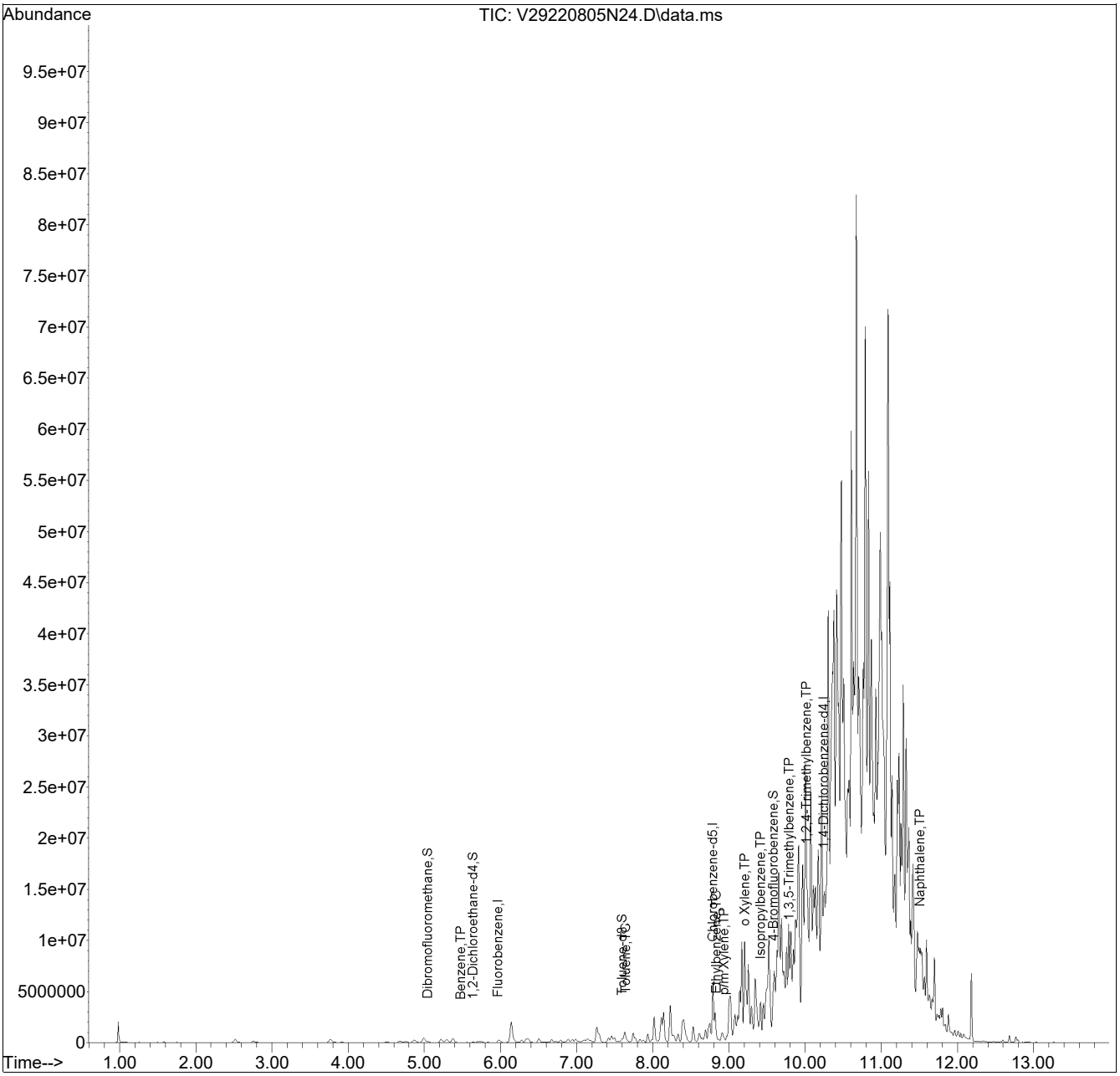


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220805N\
Data File : V29220805N24.D
Acq On : 05 Aug 2022 11:40 pm
Operator : VOA129:AJK
Sample : l2241291-03,31,5.82,5,,c
Misc : WG1672587,ICAL19173
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 07 17:30:50 2022
Quant Method : I:\VOLATILES\VOA129\2022\220805N\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05N\V29220805N01.D•

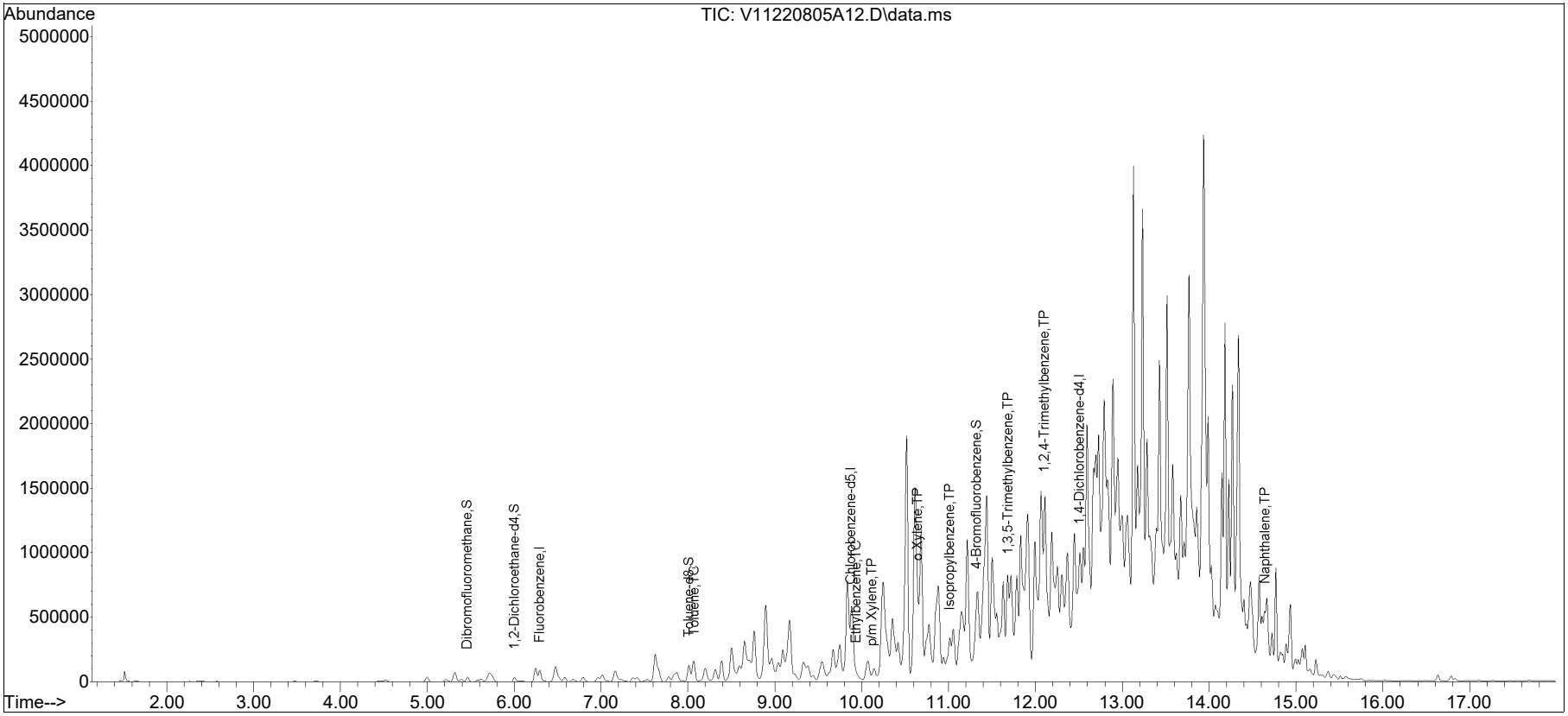


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A12.D
Acq On : 05 Aug 2022 12:00 pm
Operator : VOA111:JC
Sample : L2241291-05D,31H,5.47,5,0.050,,A
Misc : WG1672595,ICAL19072
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Aug 05 13:25:23 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•



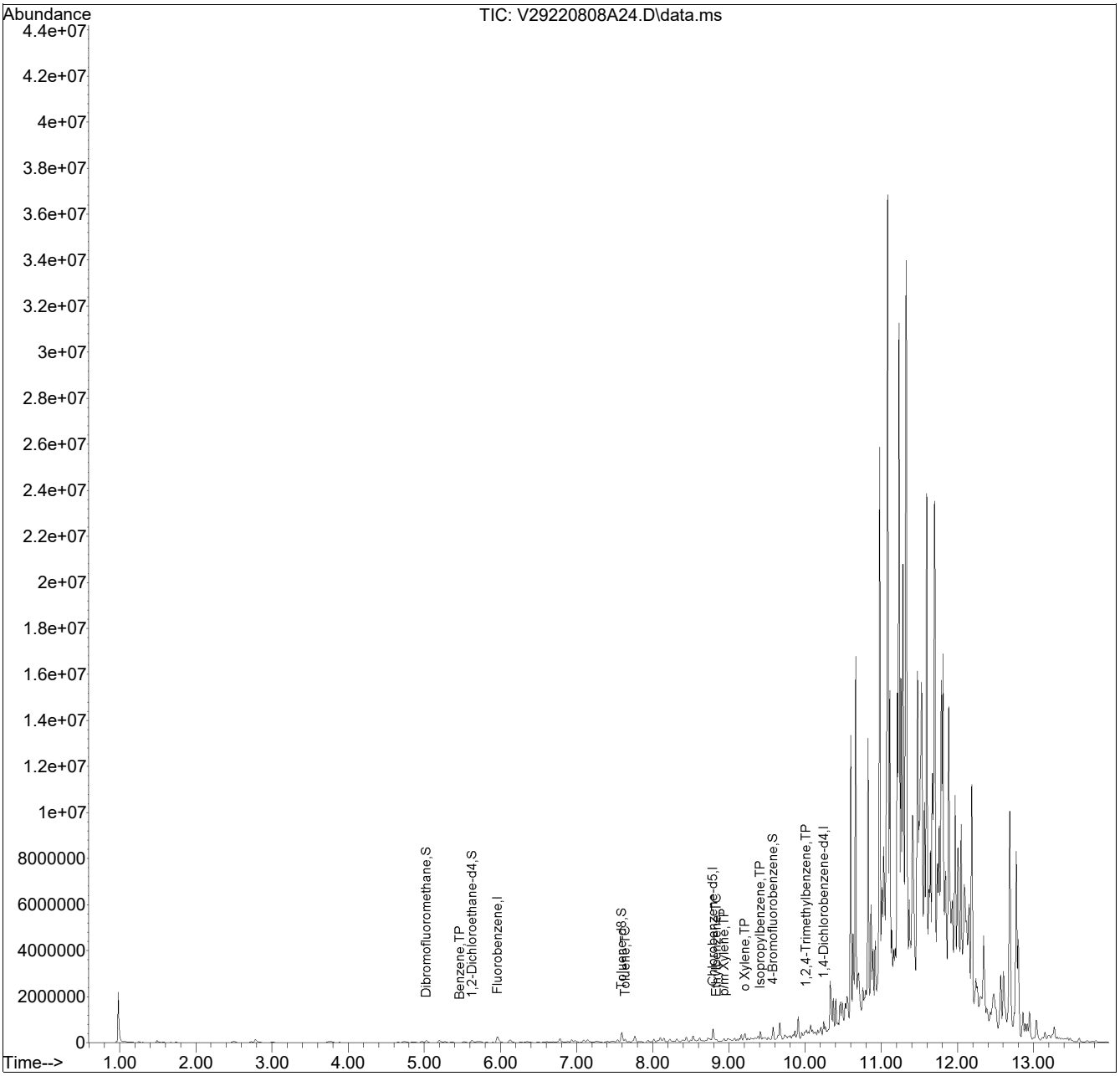
V111_220608A_8260.m Mon Aug 08 14:50:59 2022 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220808A\
Data File : V29220808A24.D
Acq On : 08 Aug 2022 03:30 pm
Operator : VOA129:NLK
Sample : l2241291-06,31,4.87,5,,b
Misc : WG1672815,ICAL19173
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 09 06:29:08 2022
Quant Method : I:\VOLATILES\VOA129\2022\220808A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list08A\V29220808A02.D•

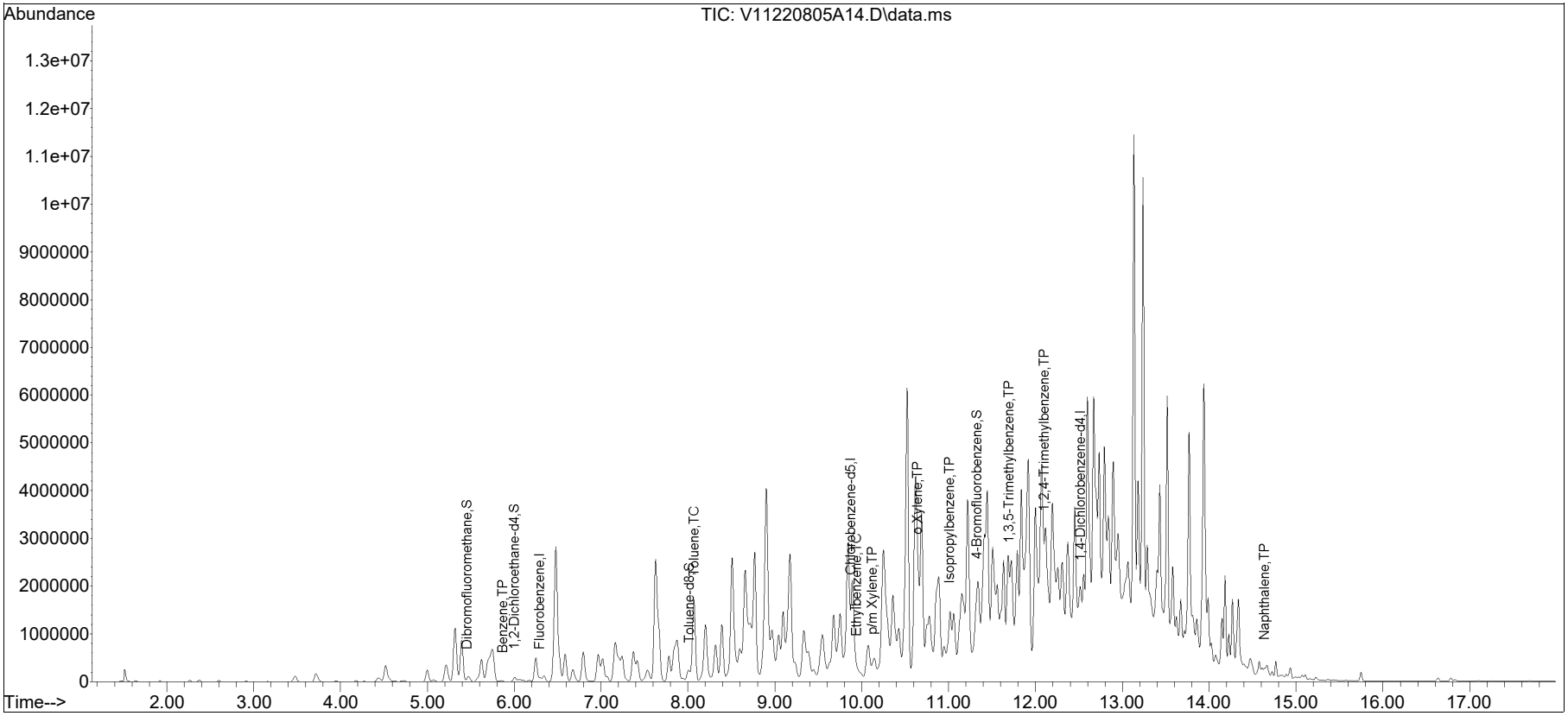


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA111\2022\220805A\
Data File : V11220805A14.D
Acq On : 05 Aug 2022 12:53 pm
Operator : VOA111:JC
Sample : L2241291-07,31,5.02,5,,C
Misc : WG1672597,ICAL19072
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 05 13:28:47 2022
Quant Method : I:\VOLATILES\VOA111\2022\220805A\V111_220608A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jun 09 10:30:20 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list05A\\V11220805A01.D•



V111_220608A_8260.m Mon Aug 08 15:22:39 2022 Page: 2

ANALYTICAL REPORT

Lab Number:	L2241635
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/11/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2241635-01	GPR794-01-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:00	08/03/22
L2241635-02	GPR794-02-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:10	08/03/22
L2241635-03	GPR794-03-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:20	08/03/22
L2241635-04	GPR794-04-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:30	08/03/22
L2241635-05	GPR794-05-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:40	08/03/22
L2241635-06	GPR794-06-SS01	SOIL	PHILADELPHIA, PA	08/03/22 11:50	08/03/22
L2241635-07	GPR794-07-SS01	SOIL	PHILADELPHIA, PA	08/03/22 12:00	08/03/22
L2241635-08	GPR794-08-SS01	SOIL	PHILADELPHIA, PA	08/03/22 12:10	08/03/22
L2241635-09	GPR1088-04-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:00	08/03/22
L2241635-10	GPR1088-05-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:10	08/03/22
L2241635-11	GPR1088-06-SS01	SOIL	PHILADELPHIA, PA	08/03/22 13:20	08/03/22
L2241635-12	DUP-51	SOIL	PHILADELPHIA, PA	08/03/22 00:00	08/03/22
L2241635-13	FB-080322-1	WATER	PHILADELPHIA, PA	08/03/22 14:00	08/03/22
L2241635-14	FB-080322-2	WATER	PHILADELPHIA, PA	08/03/22 14:10	08/03/22
L2241635-15	TB-080322	WATER	PHILADELPHIA, PA	08/03/22 00:00	08/03/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2241635-03: The internal standard (IS) responses for chlorobenzene-d5 (48%) and 1,4-dichlorobenzene-d4 (42%) and the surrogate recoveries for 1,2-dichloroethane-d4 (42%) and dibromofluoromethane (51%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis; however, since the IS response was below method criteria, all associated compounds are considered to have a potentially high bias. The results of both analyses are reported.

Semivolatile Organics

L2241635-01D, -02D, -04D, -06D, and -08D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Semivolatile Organics by SIM

The WG1672949-1 Method Blank, associated with L2241635-13 and -14, has a concentration above the reporting limit for Phenanthrene. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 08/11/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D2
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 08:29
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2200		mg/kg	14	4.8	500
Toluene	3400		mg/kg	29	16.	500
Isopropylbenzene	4000		mg/kg	29	3.1	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:25
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	4.6	0.46	40
Benzene	2300	E	mg/kg	1.2	0.38	40
1,2-Dichloroethane	ND		mg/kg	2.3	0.59	40
Toluene	3000	E	mg/kg	2.3	1.2	40
1,2-Dibromoethane	ND		mg/kg	1.2	0.68	40
Ethylbenzene	74.		mg/kg	2.3	0.32	40
p/m-Xylene	240		mg/kg	4.6	1.3	40
o-Xylene	55.		mg/kg	2.3	0.67	40
Xylenes, Total	300		mg/kg	2.3	0.67	40
Isopropylbenzene	1900	E	mg/kg	2.3	0.25	40
1,3,5-Trimethylbenzene	16.		mg/kg	4.6	0.45	40
1,2,4-Trimethylbenzene	32.		mg/kg	4.6	0.77	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D2
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 08:08
Analyst: NLK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	8.3	0.83	50
Benzene	2400	E	mg/kg	2.1	0.69	50
1,2-Dichloroethane	ND		mg/kg	4.1	1.1	50
Toluene	1200		mg/kg	4.1	2.2	50
1,2-Dibromoethane	ND		mg/kg	2.1	1.2	50
Ethylbenzene	26.		mg/kg	4.1	0.58	50
p/m-Xylene	86.		mg/kg	8.3	2.3	50
o-Xylene	25.		mg/kg	4.1	1.2	50
Xylenes, Total	110		mg/kg	4.1	1.2	50
Isopropylbenzene	2200	E	mg/kg	4.1	0.45	50
1,3,5-Trimethylbenzene	3.9	J	mg/kg	8.3	0.80	50
1,2,4-Trimethylbenzene	8.4		mg/kg	8.3	1.4	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	75		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:46
Analyst: NLK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2800		mg/kg	8.3	2.7	200
Isopropylbenzene	3000		mg/kg	16	1.8	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 09:00
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00018	1
Benzene	0.32	E	mg/kg	0.00045	0.00015	1
1,2-Dichloroethane	ND		mg/kg	0.00090	0.00023	1
Toluene	0.43	E	mg/kg	0.00090	0.00049	1
1,2-Dibromoethane	ND		mg/kg	0.00045	0.00026	1
Ethylbenzene	0.020		mg/kg	0.00090	0.00013	1
p/m-Xylene	0.060		mg/kg	0.0018	0.00050	1
o-Xylene	0.013		mg/kg	0.00090	0.00026	1
Xylenes, Total	0.073		mg/kg	0.00090	0.00026	1
Isopropylbenzene	1.4	E	mg/kg	0.00090	0.00009	1
1,3,5-Trimethylbenzene	0.0024		mg/kg	0.0018	0.00017	1
1,2,4-Trimethylbenzene	0.0040		mg/kg	0.0018	0.00030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**42**	Q	70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	**51**	Q	70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:31
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	0.41		mg/kg	0.028	0.0092	1
1,2-Dichloroethane	ND		mg/kg	0.055	0.014	1
Toluene	0.21		mg/kg	0.055	0.030	1
1,2-Dibromoethane	ND		mg/kg	0.028	0.016	1
Ethylbenzene	0.0087	J	mg/kg	0.055	0.0078	1
p/m-Xylene	ND		mg/kg	0.11	0.031	1
o-Xylene	ND		mg/kg	0.055	0.016	1
Xylenes, Total	ND		mg/kg	0.055	0.016	1
Isopropylbenzene	0.38		mg/kg	0.055	0.0060	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.11	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	103		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D2
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:52
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	35	3.5	200
Benzene	7000	E	mg/kg	8.7	2.9	200
1,2-Dichloroethane	ND		mg/kg	17	4.4	200
Toluene	5300	E	mg/kg	17	9.4	200
1,2-Dibromoethane	ND		mg/kg	8.7	5.1	200
Ethylbenzene	120		mg/kg	17	2.4	200
p/m-Xylene	430		mg/kg	35	9.7	200
o-Xylene	95.		mg/kg	17	5.0	200
Xylenes, Total	520		mg/kg	17	5.0	200
Isopropylbenzene	9000	E	mg/kg	17	1.9	200
1,3,5-Trimethylbenzene	35.		mg/kg	35	3.3	200
1,2,4-Trimethylbenzene	79.		mg/kg	35	5.8	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:07
Analyst: NLK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	7800		mg/kg	43	14.	1000
Toluene	6100		mg/kg	87	47.	1000
Isopropylbenzene	12000		mg/kg	87	9.4	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	84		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05 D2
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:48
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	6.7	0.67	50
Benzene	1700	E	mg/kg	1.7	0.56	50
1,2-Dichloroethane	ND		mg/kg	3.4	0.86	50
Toluene	1200	E	mg/kg	3.4	1.8	50
1,2-Dibromoethane	ND		mg/kg	1.7	0.98	50
Ethylbenzene	31.		mg/kg	3.4	0.47	50
p/m-Xylene	110		mg/kg	6.7	1.9	50
o-Xylene	25.		mg/kg	3.4	0.98	50
Xylenes, Total	140		mg/kg	3.4	0.98	50
Isopropylbenzene	1500	E	mg/kg	3.4	0.36	50
1,3,5-Trimethylbenzene	3.5	J	mg/kg	6.7	0.65	50
1,2,4-Trimethylbenzene	7.7		mg/kg	6.7	1.1	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	80		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05 D
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 11:08
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	2600		mg/kg	13	4.4	400
Toluene	1800		mg/kg	27	14.	400
Isopropylbenzene	2500		mg/kg	27	2.9	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	83		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D2
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 07:27
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Toluene	4300		mg/kg	59	32.	1000
Isopropylbenzene	4800		mg/kg	59	6.4	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	80		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	85		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 11:29
Analyst: NLK
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	24	2.4	200
Benzene	2000		mg/kg	5.9	2.0	200
1,2-Dichloroethane	ND		mg/kg	12	3.0	200
Toluene	4700	E	mg/kg	12	6.4	200
1,2-Dibromoethane	ND		mg/kg	5.9	3.4	200
Ethylbenzene	110		mg/kg	12	1.7	200
p/m-Xylene	390		mg/kg	24	6.6	200
o-Xylene	100		mg/kg	12	3.4	200
Xylenes, Total	490		mg/kg	12	3.4	200
Isopropylbenzene	5500	E	mg/kg	12	1.3	200
1,3,5-Trimethylbenzene	23.	J	mg/kg	24	2.3	200
1,2,4-Trimethylbenzene	48.		mg/kg	24	3.9	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07 D2
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 09:10
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.89	0.090	10
Benzene	130		mg/kg	0.22	0.074	10
1,2-Dichloroethane	ND		mg/kg	0.45	0.11	10
Toluene	8.7		mg/kg	0.45	0.24	10
1,2-Dibromoethane	ND		mg/kg	0.22	0.13	10
Ethylbenzene	1.5		mg/kg	0.45	0.063	10
p/m-Xylene	3.1		mg/kg	0.89	0.25	10
o-Xylene	ND		mg/kg	0.45	0.13	10
Xylenes, Total	3.1		mg/kg	0.45	0.13	10
Isopropylbenzene	250	E	mg/kg	0.45	0.049	10
1,3,5-Trimethylbenzene	0.20	J	mg/kg	0.89	0.086	10
1,2,4-Trimethylbenzene	0.81	J	mg/kg	0.89	0.15	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	79		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	81		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07 D
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 09:42
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	330		mg/kg	2.2	0.24	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D2
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/10/22 10:54
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	12000		mg/kg	30	10.	1000
Toluene	6200		mg/kg	60	33.	1000
Isopropylbenzene	7600		mg/kg	60	6.6	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	79		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	82		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/08/22 10:04
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	3.0	0.30	25
Benzene	3500	E	mg/kg	0.76	0.25	25
1,2-Dichloroethane	ND		mg/kg	1.5	0.39	25
Toluene	3000	E	mg/kg	1.5	0.82	25
1,2-Dibromoethane	ND		mg/kg	0.76	0.44	25
Ethylbenzene	120		mg/kg	1.5	0.21	25
p/m-Xylene	390		mg/kg	3.0	0.85	25
o-Xylene	86.		mg/kg	1.5	0.44	25
Xylenes, Total	480		mg/kg	1.5	0.44	25
Isopropylbenzene	1600	E	mg/kg	1.5	0.16	25
1,3,5-Trimethylbenzene	15.		mg/kg	3.0	0.29	25
1,2,4-Trimethylbenzene	35.		mg/kg	3.0	0.50	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	87		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:17
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 16:47
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:24
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 17:10
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-15
Client ID: TB-080322
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/08/22 19:31
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-15
Client ID: TB-080322
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/04/22 17:32
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	107		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/08/22 17:23
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/08/22 14:52

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 13-15 Batch: WG1672421-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/04/22 12:23
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-15 Batch: WG1672513-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	105		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03 Batch: WG1672815-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/08/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-02,05-08 Batch: WG1672957-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	95		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/10/22 06:44
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-08 Batch: WG1673529-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	113		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 13-15 Batch: WG1672421-2								
1,2-Dibromoethane	92		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-15 Batch: WG1672513-3 WG1672513-4								
Methyl tert butyl ether	87		85		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
Toluene	120		110		70-130	9		20
Ethylbenzene	120		110		70-130	9		20
p/m-Xylene	120		115		70-130	4		20
o-Xylene	110		110		70-130	0		20
Isopropylbenzene	120		110		70-130	9		20
1,3,5-Trimethylbenzene	120		110		64-130	9		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
Toluene-d8	106		103		70-130
4-Bromofluorobenzene	94		95		70-130
Dibromofluoromethane	101		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03 Batch: WG1672815-3 WG1672815-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-02,05-08 Batch: WG1672957-3 WG1672957-4								
Methyl tert butyl ether	85		89		66-130	5		30
Benzene	96		98		70-130	2		30
1,2-Dichloroethane	90		95		70-130	5		30
Toluene	92		94		70-130	2		30
1,2-Dibromoethane	94		97		70-130	3		30
Ethylbenzene	97		98		70-130	1		30
p/m-Xylene	97		98		70-130	1		30
o-Xylene	96		98		70-130	2		30
Isopropylbenzene	96		97		70-130	1		30
1,3,5-Trimethylbenzene	97		98		70-130	1		30
1,2,4-Trimethylbenzene	97		98		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	91		90		70-130
Dibromofluoromethane	92		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-08 Batch: WG1673529-3 WG1673529-4								
Methyl tert butyl ether	75		75		66-130	0		30
Benzene	86		85		70-130	1		30
1,2-Dichloroethane	75		75		70-130	0		30
Toluene	86		85		70-130	1		30
1,2-Dibromoethane	86		87		70-130	1		30
Ethylbenzene	88		88		70-130	0		30
p/m-Xylene	90		90		70-130	0		30
o-Xylene	89		89		70-130	0		30
Isopropylbenzene	90		88		70-130	2		30
1,3,5-Trimethylbenzene	91		90		70-130	1		30
1,2,4-Trimethylbenzene	92		89		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86		85		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	97		95		70-130
Dibromofluoromethane	89		87		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01 D
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 13:31
Analyst: JG
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.5		mg/kg	1.9	0.23	10
Fluorene	2.0		mg/kg	1.9	0.19	10
Phenanthrene	8.7		mg/kg	1.2	0.23	10
Anthracene	0.51	J	mg/kg	1.2	0.38	10
Pyrene	0.71	J	mg/kg	1.2	0.19	10
Benzo(a)anthracene	0.27	J	mg/kg	1.2	0.22	10
Chrysene	0.35	J	mg/kg	1.2	0.20	10
Benzo(b)fluoranthene	ND		mg/kg	1.2	0.32	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.47	10
Benzo(ghi)perylene	ND		mg/kg	1.5	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	71		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02 D
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 20:02
Analyst: JG
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.0	J	mg/kg	2.1	0.26	10
Fluorene	0.47	J	mg/kg	2.1	0.21	10
Phenanthrene	2.9		mg/kg	1.3	0.26	10
Anthracene	ND		mg/kg	1.3	0.42	10
Pyrene	0.86	J	mg/kg	1.3	0.21	10
Benzo(a)anthracene	0.46	J	mg/kg	1.3	0.24	10
Chrysene	0.44	J	mg/kg	1.3	0.22	10
Benzo(b)fluoranthene	0.47	J	mg/kg	1.3	0.36	10
Benzo(a)pyrene	ND		mg/kg	1.7	0.52	10
Benzo(ghi)perylene	ND		mg/kg	1.7	0.25	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	63		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 05:34
Analyst: SZ
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.017	1
Phenanthrene	0.037	J	mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.035	1
Pyrene	0.049	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.038	J	mg/kg	0.11	0.020	1
Chrysene	0.038	J	mg/kg	0.11	0.018	1
Benzo(b)fluoranthene	0.065	J	mg/kg	0.11	0.030	1
Benzo(a)pyrene	0.049	J	mg/kg	0.14	0.043	1
Benzo(ghi)perylene	0.030	J	mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	41		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	56		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04 D
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 14:16
Analyst: EK
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	3.1		mg/kg	1.9	0.23	10
Fluorene	1.0	J	mg/kg	1.9	0.19	10
Phenanthrene	1.9		mg/kg	1.2	0.23	10
Anthracene	0.46	J	mg/kg	1.2	0.38	10
Pyrene	2.0		mg/kg	1.2	0.19	10
Benzo(a)anthracene	0.64	J	mg/kg	1.2	0.22	10
Chrysene	1.4		mg/kg	1.2	0.20	10
Benzo(b)fluoranthene	0.78	J	mg/kg	1.2	0.32	10
Benzo(a)pyrene	0.48	J	mg/kg	1.5	0.47	10
Benzo(ghi)perylene	0.41	J	mg/kg	1.5	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	38		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	58		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 06:19
Analyst: SZ
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.7		mg/kg	0.20	0.024	1
Fluorene	0.17	J	mg/kg	0.20	0.019	1
Phenanthrene	0.43		mg/kg	0.12	0.024	1
Anthracene	0.070	J	mg/kg	0.12	0.039	1
Pyrene	0.058	J	mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.035	J	mg/kg	0.12	0.022	1
Chrysene	0.033	J	mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.034	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.049	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	60		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06 D
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 14:38
Analyst: EK
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	6.3		mg/kg	1.9	0.23	10
Fluorene	1.4	J	mg/kg	1.9	0.18	10
Phenanthrene	3.0		mg/kg	1.1	0.23	10
Anthracene	0.67	J	mg/kg	1.1	0.36	10
Pyrene	0.94	J	mg/kg	1.1	0.18	10
Benzo(a)anthracene	0.41	J	mg/kg	1.1	0.21	10
Chrysene	0.35	J	mg/kg	1.1	0.19	10
Benzo(b)fluoranthene	0.36	J	mg/kg	1.1	0.32	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.46	10
Benzo(ghi)perylene	ND		mg/kg	1.5	0.22	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	24		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	70		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 04:04
Analyst: SZ
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.054	J	mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.018	1
Phenanthrene	0.19		mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.077	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	0.027	J	mg/kg	0.11	0.021	1
Chrysene	0.041	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	0.034	J	mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1
Benzo(ghi)perylene	ND		mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	73		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08 D
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/10/22 15:01
Analyst: EK
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 08/04/22 20:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	8.7		mg/kg	2.0	0.24	10
Fluorene	0.75	J	mg/kg	2.0	0.19	10
Phenanthrene	2.3		mg/kg	1.2	0.24	10
Anthracene	ND		mg/kg	1.2	0.39	10
Pyrene	0.28	J	mg/kg	1.2	0.20	10
Benzo(a)anthracene	ND		mg/kg	1.2	0.22	10
Chrysene	ND		mg/kg	1.2	0.21	10
Benzo(b)fluoranthene	ND		mg/kg	1.2	0.34	10
Benzo(a)pyrene	ND		mg/kg	1.6	0.48	10
Benzo(ghi)perylene	ND		mg/kg	1.6	0.23	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	49		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	68		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 11:56
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	84		15-120
4-Terphenyl-d14	90		41-149

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 12:13
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	91		15-120
4-Terphenyl-d14	96		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/08/22 23:47
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 08/04/22 02:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-06,08 Batch: WG1671002-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	103		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/09/22 22:28
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 08/06/22 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02,07 Batch: WG1671945-1					
Naphthalene	ND		mg/kg	0.17	0.020
Fluorene	ND		mg/kg	0.17	0.016
Phenanthrene	ND		mg/kg	0.10	0.020
Anthracene	ND		mg/kg	0.10	0.032
Pyrene	ND		mg/kg	0.10	0.016
Benzo(a)anthracene	ND		mg/kg	0.10	0.019
Chrysene	ND		mg/kg	0.10	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.028
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Benzo(ghi)perylene	ND		mg/kg	0.13	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	56		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/10/22 07:35
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/09/22 09:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 13-14 Batch: WG1672949-1					
Naphthalene	2.8		ug/l	0.10	0.05
Fluorene	0.06	J	ug/l	0.10	0.01
Phenanthrene	0.07		ug/l	0.05	0.02
Anthracene	0.02	J	ug/l	0.10	0.01
Pyrene	0.03	J	ug/l	0.10	0.02
Benzo(a)anthracene	0.03	J	ug/l	0.05	0.02
Chrysene	ND		ug/l	0.10	0.01
Benzo(b)fluoranthene	ND		ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	86		15-120
4-Terphenyl-d14	92		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06,08 Batch: WG1671002-2 WG1671002-3								
Naphthalene	83		77		40-140	8		50
Fluorene	91		84		40-140	8		50
Phenanthrene	81		76		40-140	6		50
Anthracene	87		80		40-140	8		50
Pyrene	83		76		35-142	9		50
Benzo(a)anthracene	93		87		40-140	7		50
Chrysene	88		84		40-140	5		50
Benzo(b)fluoranthene	113		103		40-140	9		50
Benzo(a)pyrene	114		108		40-140	5		50
Benzo(ghi)perylene	92		87		40-140	6		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	94		84		23-120
2-Fluorobiphenyl	83		77		30-120
4-Terphenyl-d14	99		90		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,07 Batch: WG1671945-2 WG1671945-3								
Naphthalene	74		80		40-140	8		50
Fluorene	78		86		40-140	10		50
Phenanthrene	74		84		40-140	13		50
Anthracene	79		88		40-140	11		50
Pyrene	75		80		35-142	6		50
Benzo(a)anthracene	80		90		40-140	12		50
Chrysene	76		82		40-140	8		50
Benzo(b)fluoranthene	93		105		40-140	12		50
Benzo(a)pyrene	98		110		40-140	12		50
Benzo(ghi)perylene	79		92		40-140	15		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		88		23-120
2-Fluorobiphenyl	74		77		30-120
4-Terphenyl-d14	87		92		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 13-14 Batch: WG1672949-2 WG1672949-3								
Naphthalene	74		83		40-140	11		40
Fluorene	87		91		40-140	4		40
Phenanthrene	91		90		40-140	1		40
Anthracene	93		93		40-140	0		40
Pyrene	90		85		26-127	6		40
Benzo(a)anthracene	100		96		40-140	4		40
Chrysene	105		103		40-140	2		40
Benzo(b)fluoranthene	94		93		40-140	1		40
Benzo(a)pyrene	88		86		40-140	2		40
Benzo(ghi)perylene	107		101		40-140	6		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84		99		23-120
2-Fluorobiphenyl	75		82		15-120
4-Terphenyl-d14	86		83		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	408		mg/kg	2.32	0.124	1	08/04/22 23:16	08/09/22 11:35	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	347		mg/kg	2.56	0.138	1	08/04/22 23:16	08/09/22 11:40	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.2		mg/kg	2.20	0.118	1	08/04/22 23:16	08/09/22 11:45	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	63.8		mg/kg	2.34	0.125	1	08/04/22 23:16	08/09/22 11:50	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	23.6		mg/kg	2.35	0.126	1	08/04/22 23:16	08/09/22 13:17	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	429		mg/kg	2.20	0.118	1	08/04/22 23:16	08/09/22 13:22	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.73		mg/kg	2.21	0.118	1	08/04/22 23:16	08/09/22 13:27	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	132		mg/kg	2.40	0.129	1	08/04/22 23:16	08/09/22 13:32	EPA 3050B	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 14:59	EPA 3005A	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Lab Number: L2241635
Project Number: 200.00135.006
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 15:46	EPA 3005A	1,6010D	NB

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 13-14 Batch: WG1671033-1										
Lead, Total	ND		mg/l	0.010	0.003	1	08/05/22 04:15	08/08/22 14:44	1,6010D	NB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-08 Batch: WG1671440-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	08/04/22 23:16	08/09/22 10:29	1,6010D	NB

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13-14 Batch: WG1671033-2								
Lead, Total	96		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-08 Batch: WG1671440-2 SRM Lot Number: D113-540								
Lead, Total	87		-		72-128	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 13-14 QC Batch ID: WG1671033-3 QC Sample: L2241764-02 Client ID: MS Sample												
Lead, Total	ND	0.53	0.491	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1671440-3 QC Sample: L2241632-02 Client ID: MS Sample												
Lead, Total	10.8	49.6	54.9	89		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG1671440-4 QC Sample: L2241632-02 Client ID: DUP Sample						
Lead, Total	10.8	10.1	mg/kg	7		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-01
Client ID: GPR794-01-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.3		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-02
Client ID: GPR794-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.4		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-03
Client ID: GPR794-03-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:20
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-04
Client ID: GPR794-04-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:30
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.2		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-05
Client ID: GPR794-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:40
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.5		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-06
Client ID: GPR794-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 11:50
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.6		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-07
Client ID: GPR794-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 12:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-08
Client ID: GPR794-08-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/03/22 12:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-09
Client ID: GPR1088-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/03/22 13:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.2		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.2		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-10
Client ID: GPR1088-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 13:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH	8.9	(H)	SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-11
Client ID: GPR1088-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil
Date Collected: 08/03/22 13:20
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.3		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.7		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-12
Client ID: DUP-51
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/03/22 00:00
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.0		%	0.100	NA	1	-	08/04/22 12:45	121,2540G	RI
pH (H)	6.1		SU	-	NA	1	-	08/08/22 09:52	1,9045D	KS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-13
Client ID: FB-080322-1
Sample Location: PHILADELPHIA, PA

Date Collected: 08/03/22 14:00
Date Received: 08/03/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.1		SU	-	NA	1	-	08/08/22 17:57	1,9040C	AS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2241635
Report Date: 08/11/22

SAMPLE RESULTS

Lab ID: L2241635-14
Client ID: FB-080322-2
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Water

Date Collected: 08/03/22 14:10
Date Received: 08/03/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.3		SU	-	NA	1	-	08/08/22 17:57	1,9040C	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 13-14 Batch: WG1672434-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 09-12 Batch: WG1672436-1								
pH	100		-		99-101	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2241635

Report Date: 08/11/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG1671234-1 QC Sample: L2241632-01 Client ID: DUP Sample						
Solids, Total	86.6	86.4	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 13-14 QC Batch ID: WG1672434-2 QC Sample: L2241635-13 Client ID: FB-080322-1						
pH (H)	6.1	6.0	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 09-12 QC Batch ID: WG1672436-2 QC Sample: L2242054-01 Client ID: DUP Sample						
pH	9.5	9.8	SU	3		5

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-01A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-01B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-01C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-01D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-01F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-02A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-02B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-02C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-02D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-02F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-03A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2241635-03B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260H(14),PA-8260HLW(14)
L2241635-03C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260H(14),PA-8260HLW(14)
L2241635-03D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-03F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-04A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-04B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-04C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-04D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-04F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-05A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-05B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-05C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-05D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-05F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-06A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-06B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-06C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-06D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-06F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-07A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-07B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-07C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-07D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-07F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-08A	Vial MeOH preserved	A	NA		2.7	Y	Absent		PA-8260HLW(14)
L2241635-08B	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-08C	Vial water preserved	A	NA		2.7	Y	Absent	04-AUG-22 09:14	PA-8260HLW(14)
L2241635-08D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L2241635-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		PB-TI(180)
L2241635-08F	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		PA-PAH(14)
L2241635-09A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-10A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-11A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2241635
Report Date: 08/11/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2241635-12A	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		TS(7),PH-9045(1)
L2241635-13A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13C	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-13D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-13E	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-13F	Plastic 60ml unpreserved	A	7	7	2.7	Y	Absent		PH-9040(1)
L2241635-13G	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		PB-TI(180)
L2241635-13H	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-13I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-14A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14C	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-14D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-14E	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-14F	Plastic 60ml unpreserved	A	7	7	2.7	Y	Absent		PH-9040(1)
L2241635-14G	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		PB-TI(180)
L2241635-14H	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-14I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		PA-PAHSIM-LVI(7)
L2241635-15A	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-15B	Vial HCl preserved	A	NA		2.7	Y	Absent		PA-8260(14)
L2241635-15C	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L2241635-15D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2241635
Project Number:	200.00135.006	**Report Date:**	08/11/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/4/22

ALPHA Job #: L2241635

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

5-DAY

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

Short list 1-5 | TEG | PH

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Short list 1-5	TEG	PH	Sample Specific Comments
L1635-01	GPR-794-01-5501	8/3/22	1100	S		☑	☑	☐	
-02	GPR-794-02-5501		1110			☑	☑	☐	
-03	GPR-794-03-5501		1120			☑	☑	☐	
-04	GPR-794-04-5501		1130			☑	☑	☐	
-05	GPR-794-05-5501		1140			☑	☑	☐	
-06	GPR-794-06-5501		1150			☑	☑	☐	
-07	GPR-794-07-5501		1200			☑	☑	☐	
-08	GPR-794-08-5501		1210			☑	☑	☐	
-09	GPR-1088-04-5501		1300			☐	☐	☑	
-10	GPR-1088-05-5501		1310			☐	☐	☑	
	Container Type					-	-	G	
	Preservative					-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22 2200	Tom Clark	8/3/22 1508
	8/3/22		8/3 2400
	8/3/22		8/4/22 1:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(FRONT) (rev. 5-JAN-12)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/4/22

ALPHA Job #: L2241635

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: 18599

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

x 5-DAY

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☐ Same as Client info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 Short list 1-5	TEG	PH	VOC Portion of SLI-5	EDB (8011)	Sample Specific Comments
L1635-11	GPR-1088-06-5501	8/3/22	1320	S	AM	☒	☒	☒	☐	☐	PH ONLY
-12	DUP-51		—	S		☐	☐	☒	☐	☐	
-13	FB-080322-1		1400	W		☒	☒	☒	☐	☐	
-14	FB-080322-2		1410	W		☒	☒	☒	☐	☐	
-15	TB-080322		—	W		☐	☐	☐	☒	☒	

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do

Preservation
☐ Lab to do

(Please specify below)

TOTAL # BOTTLES

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/22		
Tom Clark	1340		8/3/22 2100
	2100		8/4/22 1:10
	8/3/22		8/4/22 0230

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(HC) (rev. 8-JAN-12)

PADEP Short List Analytical Suites per Table III-5:

1. Leaded Gasoline, Aviation Gasoline and Jet Fuel - benzene, toluene, ethyl benzene, xylenes (total), cumene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-dichloroethane, 1,2-dibromoethane, lead

2. Unleaded Gasoline - benzene, toluene, ethyl benzene, xylenes (total), cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

3. Kerosene, Fuel Oil No. 1 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene

4. Diesel Fuel and Fuel Oil No. 2 - benzene, toluene, ethyl benzene, cumene, methyl tert-butyl ether, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethyl benzene

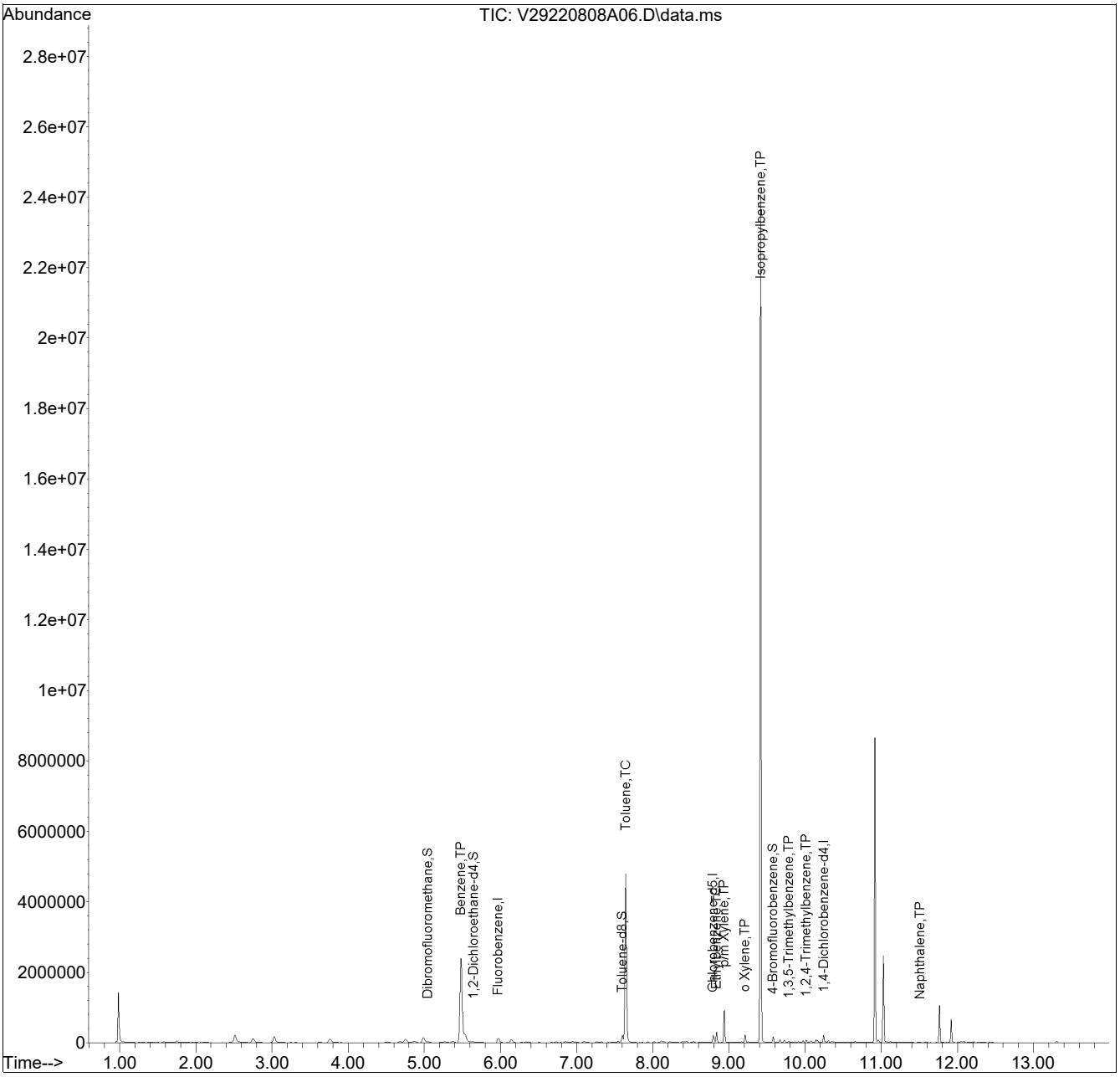
5. Fuel Oil Nos. 4, 5, and 6, and Lubricating Oils and Fluids - benzene, naphthalene, fluorene, anthracene, phenanthrene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220808A\
Data File : V29220808A06.D
Acq On : 08 Aug 2022 09:00 am
Operator : VOA129:NLK
Sample : l2241635-03,31,6.09,5,,c
Misc : WG1672815,ICAL19173
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 09 08:30:01 2022
Quant Method : I:\VOLATILES\VOA129\2022\220808A\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list08A\V29220808A02.D•



ANALYTICAL REPORT

Lab Number:	L2243874
Client:	Ransom/Hilco 99 Summer St. Suite 1110 Boston, MA 02110
ATTN:	Joe Jeray
Phone:	(978) 729-3209
Project Name:	PHILADELPHIA REFINERY
Project Number:	200.00135.006
Report Date:	08/22/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2243874-01	GPU767-01-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:30	08/15/22
L2243874-02	GPU767-02-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:40	08/15/22
L2243874-03	GPU767-03-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:45	08/15/22
L2243874-04	GPU767-04-SS01	SOIL	PHILADELPHIA, PA	08/15/22 12:55	08/15/22
L2243874-05	GPU767-05-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:30	08/15/22
L2243874-06	GPU767-06-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:40	08/15/22
L2243874-07	GPU767-07-SS01	SOIL	PHILADELPHIA, PA	08/15/22 13:50	08/15/22
L2243874-08	TB-081522	WATER	PHILADELPHIA, PA	08/15/22 00:00	08/15/22
L2243874-09	FB-081522	WATER	PHILADELPHIA, PA	08/15/22 13:45	08/15/22

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2243874-01: The collection date and time on the chain of custody was 12-AUG-22 12:30; however, the collection date/time on the container label was 15-AUG-22 12:30. At the client's request, the collection date/time is reported as 15-AUG-22 12:30.

L2243874-02: The collection date and time on the chain of custody was 12-AUG-22 12:40; however, the collection date/time on the container label was 15-AUG-22 12:40. At the client's request, the collection date/time is reported as 15-AUG-22 12:40.

L2243874-03: The collection date and time on the chain of custody was 12-AUG-22 12:45; however, the collection date/time on the container label was 15-AUG-22 12:45. At the client's request, the collection date/time is reported as 15-AUG-22 12:45.

L2243874-04: The collection date and time on the chain of custody was 12-AUG-22 12:55; however, the collection date/time on the container label was 15-AUG-22 12:55. At the client's request, the collection date/time is reported as 15-AUG-22 12:55.

L2243874-05: The collection date and time on the chain of custody was 12-AUG-22 13:30; however, the collection date/time on the container label was 15-AUG-22 13:30. At the client's request, the collection date/time is reported as 15-AUG-22 13:30.

L2243874-06: The collection date and time on the chain of custody was 12-AUG-22 13:40; however, the collection date/time on the container label was 15-AUG-22 13:40. At the client's request, the collection date/time is reported as 15-AUG-22 13:40.

L2243874-07: The collection date and time on the chain of custody was 12-AUG-22 13:50; however, the collection date/time on the container label was 15-AUG-22 13:50. At the client's request, the collection date/time is reported as 15-AUG-22 13:50.

L2243874-08: The collection date and time on the chain of custody was 12-AUG-22 00:00; however, the

Project Name: PHILADELPHIA REFINERY **Lab Number:** L2243874
Project Number: 200.00135.006 **Report Date:** 08/22/22

Case Narrative (continued)

collection date/time on the container label was 15-AUG-22 00:00. At the client's request, the collection date/time is reported as 15-AUG-22 00:00.
L2243874-09: The collection date and time on the chain of custody was 12-AUG-22 14:00; however, the collection date/time on the container label was 15-AUG-22 14:00. At the client's request, the collection date/time is reported as 15-AUG-22 13:45.

Volatile Organics
L2243874-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (174%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L2243874-03: The sample was analyzed as a High Level Methanol in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis. The results of both analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Steven Gniadek

Title: Technical Director/Representative Date: 08/22/22

ORGANICS

VOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 13:08
Analyst: AJK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0028	0.00028	1
Benzene	ND		mg/kg	0.00069	0.00023	1
1,2-Dichloroethane	ND		mg/kg	0.0014	0.00036	1
Toluene	ND		mg/kg	0.0014	0.00075	1
1,2-Dibromoethane	ND		mg/kg	0.00069	0.00040	1
Ethylbenzene	ND		mg/kg	0.0014	0.00019	1
p/m-Xylene	ND		mg/kg	0.0028	0.00077	1
o-Xylene	ND		mg/kg	0.0014	0.00040	1
Xylenes, Total	ND		mg/kg	0.0014	0.00040	1
Isopropylbenzene	0.0011	J	mg/kg	0.0014	0.00015	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0028	0.00027	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0028	0.00046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 13:28
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.00035	0.00003	1
Benzene	0.00007	J	mg/kg	0.00008	0.00002	1
1,2-Dichloroethane	ND		mg/kg	0.00018	0.00004	1
Toluene	0.00018		mg/kg	0.00018	0.00009	1
1,2-Dibromoethane	ND		mg/kg	0.00008	0.00005	1
Ethylbenzene	0.00016	J	mg/kg	0.00018	0.00002	1
p/m-Xylene	0.00026	J	mg/kg	0.00035	0.00009	1
o-Xylene	0.00011	J	mg/kg	0.00018	0.00005	1
Xylenes, Total	0.00037	J	mg/kg	0.00018	0.00005	1
Isopropylbenzene	0.0093		mg/kg	0.00018	0.00001	1
1,3,5-Trimethylbenzene	0.00010	J	mg/kg	0.00035	0.00003	1
1,2,4-Trimethylbenzene	0.00027	J	mg/kg	0.00035	0.00005	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**174**	Q	70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 14:10
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.0030		mg/kg	0.00048	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00095	0.00024	1
Toluene	0.00091	J	mg/kg	0.00095	0.00052	1
1,2-Dibromoethane	ND		mg/kg	0.00048	0.00028	1
Ethylbenzene	0.0015		mg/kg	0.00095	0.00013	1
p/m-Xylene	0.00082	J	mg/kg	0.0019	0.00053	1
o-Xylene	0.0010		mg/kg	0.00095	0.00028	1
Xylenes, Total	0.0018	J	mg/kg	0.00095	0.00028	1
Isopropylbenzene	0.42	E	mg/kg	0.00095	0.00010	1
1,3,5-Trimethylbenzene	0.00058	J	mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	0.00089	J	mg/kg	0.0019	0.00032	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	88		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/18/22 08:55
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.13	0.014	1
Benzene	0.071		mg/kg	0.034	0.011	1
1,2-Dichloroethane	ND		mg/kg	0.067	0.017	1
Toluene	0.052	J	mg/kg	0.067	0.036	1
1,2-Dibromoethane	ND		mg/kg	0.034	0.020	1
Ethylbenzene	0.030	J	mg/kg	0.067	0.0095	1
p/m-Xylene	0.049	J	mg/kg	0.13	0.038	1
o-Xylene	0.022	J	mg/kg	0.067	0.020	1
Xylenes, Total	0.071	J	mg/kg	0.067	0.020	1
Isopropylbenzene	1.6		mg/kg	0.067	0.0073	1
1,3,5-Trimethylbenzene	0.016	J	mg/kg	0.13	0.013	1
1,2,4-Trimethylbenzene	0.032	J	mg/kg	0.13	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 14:51
Analyst: AJK
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.14	0.014	1
Benzene	0.021	J	mg/kg	0.036	0.012	1
1,2-Dichloroethane	ND		mg/kg	0.071	0.018	1
Toluene	0.17		mg/kg	0.071	0.039	1
1,2-Dibromoethane	ND		mg/kg	0.036	0.021	1
Ethylbenzene	0.047	J	mg/kg	0.071	0.010	1
p/m-Xylene	0.14		mg/kg	0.14	0.040	1
o-Xylene	ND		mg/kg	0.071	0.021	1
Xylenes, Total	0.14		mg/kg	0.071	0.021	1
Isopropylbenzene	4.8		mg/kg	0.071	0.0078	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.14	0.014	1
1,2,4-Trimethylbenzene	0.037	J	mg/kg	0.14	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	102		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:12
Analyst: AJK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.12	0.012	1
Benzene	0.044		mg/kg	0.029	0.0098	1
1,2-Dichloroethane	ND		mg/kg	0.059	0.015	1
Toluene	0.062		mg/kg	0.059	0.032	1
1,2-Dibromoethane	ND		mg/kg	0.029	0.017	1
Ethylbenzene	0.12		mg/kg	0.059	0.0083	1
p/m-Xylene	0.19		mg/kg	0.12	0.033	1
o-Xylene	0.021	J	mg/kg	0.059	0.017	1
Xylenes, Total	0.21	J	mg/kg	0.059	0.017	1
Isopropylbenzene	22.	E	mg/kg	0.059	0.0064	1
1,3,5-Trimethylbenzene	0.017	J	mg/kg	0.12	0.011	1
1,2,4-Trimethylbenzene	0.075	J	mg/kg	0.12	0.020	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05 D
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/18/22 10:34
Analyst: NLK
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	24.		mg/kg	0.24	0.026	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:33
Analyst: AJK
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	ND		mg/kg	0.00047	0.00016	1
1,2-Dichloroethane	ND		mg/kg	0.00094	0.00024	1
Toluene	ND		mg/kg	0.00094	0.00051	1
1,2-Dibromoethane	ND		mg/kg	0.00047	0.00027	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	0.0010		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	93		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 08/17/22 15:53
Analyst: AJK
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0040	0.00040	1
Benzene	ND		mg/kg	0.0010	0.00033	1
1,2-Dichloroethane	ND		mg/kg	0.0020	0.00051	1
Toluene	ND		mg/kg	0.0020	0.0011	1
1,2-Dibromoethane	ND		mg/kg	0.0010	0.00059	1
Ethylbenzene	ND		mg/kg	0.0020	0.00028	1
p/m-Xylene	ND		mg/kg	0.0040	0.0011	1
o-Xylene	ND		mg/kg	0.0020	0.00058	1
Xylenes, Total	ND		mg/kg	0.0020	0.00058	1
Isopropylbenzene	0.00049	J	mg/kg	0.0020	0.00022	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0040	0.00039	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0040	0.00067	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	96		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-08
Client ID: TB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 00:00
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/16/22 16:07
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-08
Client ID: TB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 00:00
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/16/22 09:54
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 08/16/22 16:14
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.011	0.005	1	A

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/16/22 10:20
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	98		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 08/16/22 14:34
Analyst: AMM

Extraction Method: EPA 8011
Extraction Date: 08/16/22 13:34

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 08-09 Batch: WG1675742-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.005	A

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/16/22 08:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1676096-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/17/22 11:11
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03,06-07 Batch: WG1676803-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
1,2-Dichloroethane	ND		mg/kg	0.0010	0.00026
Toluene	ND		mg/kg	0.0010	0.00054
1,2-Dibromoethane	ND		mg/kg	0.00050	0.00029
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/17/22 11:11
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04-05 Batch: WG1676810-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	111		70-130

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/18/22 08:27
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 03,05 Batch: WG1677395-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
1,2-Dichloroethane	ND		mg/kg	0.050	0.013
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 08-09 Batch: WG1675742-2								
1,2-Dibromoethane	101		-		80-120	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1676096-3 WG1676096-4								
Methyl tert butyl ether	87		97		63-130	11		20
Benzene	100		100		70-130	0		20
1,2-Dichloroethane	100		110		70-130	10		20
Toluene	98		99		70-130	1		20
Ethylbenzene	98		99		70-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	92		96		70-130	4		20
1,3,5-Trimethylbenzene	92		95		64-130	3		20
1,2,4-Trimethylbenzene	91		93		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		112		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	92		93		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03,06-07 Batch: WG1676803-3 WG1676803-4								
Methyl tert butyl ether	70		70		66-130	0		30
Benzene	88		87		70-130	1		30
1,2-Dichloroethane	90		89		70-130	1		30
Toluene	90		93		70-130	3		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	94		96		70-130	2		30
p/m-Xylene	96		98		70-130	2		30
o-Xylene	95		97		70-130	2		30
Isopropylbenzene	95		98		70-130	3		30
1,3,5-Trimethylbenzene	98		101		70-130	3		30
1,2,4-Trimethylbenzene	99		102		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		91		70-130
Toluene-d8	101		103		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	87		89		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04-05 Batch: WG1676810-3 WG1676810-4								
Methyl tert butyl ether	70		70		66-130	0		30
Benzene	88		87		70-130	1		30
1,2-Dichloroethane	90		89		70-130	1		30
Toluene	90		93		70-130	3		30
1,2-Dibromoethane	83		84		70-130	1		30
Ethylbenzene	94		96		70-130	2		30
p/m-Xylene	96		98		70-130	2		30
o-Xylene	95		97		70-130	2		30
Isopropylbenzene	95		98		70-130	3		30
1,3,5-Trimethylbenzene	98		101		70-130	3		30
1,2,4-Trimethylbenzene	99		102		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		91		70-130
Toluene-d8	100		103		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	87		90		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 03,05 Batch: WG1677395-3 WG1677395-4								
Methyl tert butyl ether	92		97		66-130	5		30
Benzene	91		96		70-130	5		30
1,2-Dichloroethane	92		97		70-130	5		30
Toluene	88		89		70-130	1		30
1,2-Dibromoethane	93		95		70-130	2		30
Ethylbenzene	92		95		70-130	3		30
p/m-Xylene	92		96		70-130	4		30
o-Xylene	94		97		70-130	3		30
Isopropylbenzene	93		95		70-130	2		30
1,3,5-Trimethylbenzene	91		96		70-130	5		30
1,2,4-Trimethylbenzene	91		95		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		102		70-130
Toluene-d8	102		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	98		99		70-130

SEMIVOLATILES

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:08
Analyst: EK
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.023	1
Fluorene	ND		mg/kg	0.19	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.023	1
Anthracene	ND		mg/kg	0.11	0.037	1
Pyrene	0.032	J	mg/kg	0.11	0.019	1
Benzo(a)anthracene	0.044	J	mg/kg	0.11	0.021	1
Chrysene	0.046	J	mg/kg	0.11	0.020	1
Benzo(b)fluoranthene	0.10	J	mg/kg	0.11	0.032	1
Benzo(a)pyrene	0.070	J	mg/kg	0.15	0.046	1
Indeno(1,2,3-cd)pyrene	0.077	J	mg/kg	0.15	0.026	1
Benzo(ghi)perylene	0.076	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	59		30-120
4-Terphenyl-d14	62		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:31
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.048	J	mg/kg	0.20	0.024	1
Fluorene	0.085	J	mg/kg	0.20	0.019	1
Phenanthrene	0.24		mg/kg	0.12	0.024	1
Anthracene	0.058	J	mg/kg	0.12	0.039	1
Pyrene	0.18		mg/kg	0.12	0.020	1
Benzo(a)anthracene	0.12		mg/kg	0.12	0.022	1
Chrysene	0.12		mg/kg	0.12	0.021	1
Benzo(b)fluoranthene	0.15		mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.14	J	mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	0.091	J	mg/kg	0.16	0.028	1
Benzo(ghi)perylene	0.077	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	34		23-120
2-Fluorobiphenyl	**24**	Q	30-120
4-Terphenyl-d14	25		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 00:55
Analyst: EK
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.20	0.024	1
Fluorene	ND		mg/kg	0.20	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	ND		mg/kg	0.12	0.020	1
Benzo(a)anthracene	ND		mg/kg	0.12	0.022	1
Chrysene	ND		mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	ND		mg/kg	0.12	0.033	1
Benzo(a)pyrene	ND		mg/kg	0.16	0.048	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.16	0.028	1
Benzo(ghi)perylene	ND		mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	44		30-120
4-Terphenyl-d14	48		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 01:18
Analyst: EK
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.024	1
Fluorene	ND		mg/kg	0.19	0.019	1
Phenanthrene	ND		mg/kg	0.12	0.024	1
Anthracene	ND		mg/kg	0.12	0.038	1
Pyrene	0.090	J	mg/kg	0.12	0.019	1
Benzo(a)anthracene	0.037	J	mg/kg	0.12	0.022	1
Chrysene	0.093	J	mg/kg	0.12	0.020	1
Benzo(b)fluoranthene	0.054	J	mg/kg	0.12	0.033	1
Benzo(a)pyrene	0.049	J	mg/kg	0.16	0.047	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.16	0.027	1
Benzo(ghi)perylene	0.064	J	mg/kg	0.16	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	61		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 01:41
Analyst: EK
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.022	1
Fluorene	ND		mg/kg	0.18	0.018	1
Phenanthrene	ND		mg/kg	0.11	0.022	1
Anthracene	ND		mg/kg	0.11	0.036	1
Pyrene	0.022	J	mg/kg	0.11	0.018	1
Benzo(a)anthracene	ND		mg/kg	0.11	0.021	1
Chrysene	0.024	J	mg/kg	0.11	0.019	1
Benzo(b)fluoranthene	ND		mg/kg	0.11	0.031	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.15	0.026	1
Benzo(ghi)perylene	0.025	J	mg/kg	0.15	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	34		30-120
4-Terphenyl-d14	36		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 02:05
Analyst: EK
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.068	J	mg/kg	0.18	0.021	1
Fluorene	0.030	J	mg/kg	0.18	0.017	1
Phenanthrene	0.19		mg/kg	0.10	0.021	1
Anthracene	0.053	J	mg/kg	0.10	0.034	1
Pyrene	0.34		mg/kg	0.10	0.017	1
Benzo(a)anthracene	0.33		mg/kg	0.10	0.020	1
Chrysene	0.38		mg/kg	0.10	0.018	1
Benzo(b)fluoranthene	0.56		mg/kg	0.10	0.030	1
Benzo(a)pyrene	0.42		mg/kg	0.14	0.043	1
Indeno(1,2,3-cd)pyrene	0.35		mg/kg	0.14	0.024	1
Benzo(ghi)perylene	0.29		mg/kg	0.14	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	117		23-120
2-Fluorobiphenyl	82		30-120
4-Terphenyl-d14	84		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 08/20/22 02:28
Analyst: EK
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.17	0.021	1
Fluorene	ND		mg/kg	0.17	0.017	1
Phenanthrene	ND		mg/kg	0.10	0.021	1
Anthracene	ND		mg/kg	0.10	0.034	1
Pyrene	ND		mg/kg	0.10	0.017	1
Benzo(a)anthracene	ND		mg/kg	0.10	0.019	1
Chrysene	ND		mg/kg	0.10	0.018	1
Benzo(b)fluoranthene	ND		mg/kg	0.10	0.029	1
Benzo(a)pyrene	ND		mg/kg	0.14	0.042	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.14	0.024	1
Benzo(ghi)perylene	ND		mg/kg	0.14	0.020	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	77		18-120

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/22 16:24
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/21/22 08:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	ND		ug/l	0.10	0.05	1
Fluorene	0.06	J	ug/l	0.10	0.01	1
Phenanthrene	0.04	J	ug/l	0.05	0.02	1
Anthracene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.05	0.02	1
Chrysene	ND		ug/l	0.10	0.01	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	83		41-149

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/19/22 21:24
Analyst: EK

Extraction Method: EPA 3546
Extraction Date: 08/17/22 01:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1676057-1					
Naphthalene	ND		mg/kg	0.16	0.020
Fluorene	ND		mg/kg	0.16	0.016
Phenanthrene	ND		mg/kg	0.098	0.020
Anthracene	ND		mg/kg	0.098	0.032
Pyrene	ND		mg/kg	0.098	0.016
Benzo(a)anthracene	ND		mg/kg	0.098	0.018
Chrysene	ND		mg/kg	0.098	0.017
Benzo(b)fluoranthene	ND		mg/kg	0.098	0.027
Benzo(a)pyrene	ND		mg/kg	0.13	0.040
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.13	0.023
Benzo(ghi)perylene	ND		mg/kg	0.13	0.019

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	32		30-120
4-Terphenyl-d14	40		18-120

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/21/22 16:07
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 08/21/22 08:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09 Batch: WG1677772-1					
Naphthalene	ND		ug/l	0.10	0.05
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	0.03	J	ug/l	0.05	0.02
Anthracene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
Benzo(a)anthracene	0.04	J	ug/l	0.05	0.02
Chrysene	0.02	J	ug/l	0.10	0.01
Benzo(b)fluoranthene	0.02	J	ug/l	0.05	0.01
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	70		15-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1676057-2 WG1676057-3								
Naphthalene	58		56		40-140	4		50
Fluorene	61		60		40-140	2		50
Phenanthrene	58		58		40-140	0		50
Anthracene	60		59		40-140	2		50
Pyrene	62		63		35-142	2		50
Benzo(a)anthracene	58		57		40-140	2		50
Chrysene	57		56		40-140	2		50
Benzo(b)fluoranthene	58		58		40-140	0		50
Benzo(a)pyrene	58		58		40-140	0		50
Indeno(1,2,3-cd)pyrene	67		66		40-140	2		50
Benzo(ghi)perylene	59		58		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	89		86		23-120
2-Fluorobiphenyl	63		62		30-120
4-Terphenyl-d14	65		68		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09 Batch: WG1677772-2 WG1677772-3								
Naphthalene	73		86		40-140	16		40
Fluorene	78		92		40-140	16		40
Phenanthrene	79		89		40-140	12		40
Anthracene	79		87		40-140	10		40
Pyrene	79		86		26-127	8		40
Benzo(a)anthracene	89		90		40-140	1		40
Chrysene	81		94		40-140	15		40
Benzo(b)fluoranthene	77		92		40-140	18		40
Benzo(a)pyrene	73		80		40-140	9		40
Indeno(1,2,3-cd)pyrene	98		102		40-140	4		40
Benzo(ghi)perylene	93		98		40-140	5		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	83		94		23-120
2-Fluorobiphenyl	68		80		15-120
4-Terphenyl-d14	75		84		41-149

METALS

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	380		mg/kg	2.20	0.118	1	08/16/22 21:25	08/22/22 13:00	EPA 3050B	1,6010D	EW

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	115		mg/kg	2.30	0.123	1	08/16/22 21:25	08/22/22 13:10	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	72.0		mg/kg	2.30	0.123	1	08/16/22 21:25	08/22/22 13:15	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	121		mg/kg	2.22	0.119	1	08/16/22 21:25	08/22/22 13:21	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.5		mg/kg	2.23	0.120	1	08/16/22 21:25	08/22/22 13:26	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Lab Number: L2243874
Project Number: 200.00135.006
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	688		mg/kg	2.05	0.110	1	08/16/22 21:25	08/22/22 14:22	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	87.0		mg/kg	2.01	0.108	1	08/16/22 21:25	08/22/22 14:27	EPA 3050B	1,6010D	ZK

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-09
Client ID: FB-081522
Sample Location: PHILADELPHIA, PA
Date Collected: 08/15/22 13:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	08/16/22 21:25	08/19/22 14:40	EPA 3005A	1,6020B	SV

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1675792-1										
Lead, Total	0.117	J	mg/kg	2.08	0.112	1	08/16/22 21:25	08/22/22 10:48	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 09 Batch: WG1675903-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	08/16/22 21:25	08/19/22 14:04	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1675792-2 SRM Lot Number: D113-540								
Lead, Total	98		-		72-128	-		
Total Metals - Mansfield Lab Associated sample(s): 09 Batch: WG1675903-2								
Lead, Total	107		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1675792-3 QC Sample: L2243899-05 Client ID: MS Sample												
Lead, Total	1330	45	288	**0**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 09 QC Batch ID: WG1675903-3 QC Sample: L2243874-09 Client ID: FB-081522												
Lead, Total	ND	530	623.7	118		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1675792-4 QC Sample: L2243899-05 Client ID: DUP Sample						
Lead, Total	1330	1110	mg/kg	18		20
Total Metals - Mansfield Lab Associated sample(s): 09 QC Batch ID: WG1675903-4 QC Sample: L2243874-09 Client ID: FB-081522						
Lead, Total	ND	ND	ug/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-01
Client ID: GPU767-01-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:30
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.9		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-02
Client ID: GPU767-02-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 12:40
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.5		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-03
Client ID: GPU767-03-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:45
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-04
Client ID: GPU767-04-SS01
Sample Location: PHILADELPHIA, PA

Date Collected: 08/15/22 12:55
Date Received: 08/15/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.8		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-05
Client ID: GPU767-05-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:30
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.3		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-06
Client ID: GPU767-06-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:40
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006
Lab Number: L2243874
Report Date: 08/22/22

SAMPLE RESULTS

Lab ID: L2243874-07
Client ID: GPU767-07-SS01
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 08/15/22 13:50
Date Received: 08/15/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.2		%	0.100	NA	1	-	08/16/22 08:51	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: PHILADELPHIA REFINERY

Project Number: 200.00135.006

Lab Number: L2243874

Report Date: 08/22/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1675702-1 QC Sample: L2243849-01 Client ID: DUP Sample						
Solids, Total	86.0	87.7	%	2		20

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-01A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-01B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-01C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-01D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-01E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-01F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-02A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-02B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-02C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-02D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-02E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-02F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-03A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2243874-03B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260H(14),PA-8260HLW(14)
L2243874-03C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260H(14),PA-8260HLW(14)
L2243874-03D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-03E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-03F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-04A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-04B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-04C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-04D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-04E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-04F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-05A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-05B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-05C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-05D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-05E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-05F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-06A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-06B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-06C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-06D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-06E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-06F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-07A	Vial MeOH preserved	B	NA		3.2	Y	Absent		PA-8260HLW(14)
L2243874-07B	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-07C	Vial water preserved	B	NA		3.2	Y	Absent	16-AUG-22 08:09	PA-8260HLW(14)
L2243874-07D	Glass 60mL/2oz unpreserved	B	NA		3.2	Y	Absent		PB-TI(180)
L2243874-07E	Plastic 120ml unpreserved	B	NA		3.2	Y	Absent		TS(7)
L2243874-07F	Glass 120ml/4oz unpreserved	B	NA		3.2	Y	Absent		PA-PAH(14)
L2243874-08A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-08B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-08D	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-08E	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-09A	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09B	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09C	Vial HCl preserved	B	NA		3.2	Y	Absent		PA-8260(14)
L2243874-09D	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)

*Values in parentheses indicate holding time in days

Project Name: PHILADELPHIA REFINERY
Project Number: 200.00135.006

Lab Number: L2243874
Report Date: 08/22/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243874-09E	Vial Na2S2O3 preserved	B	NA		3.2	Y	Absent		8011(14)
L2243874-09F	Plastic 250ml HNO3 preserved	B	<2	<2	3.2	Y	Absent		PB-6020T-PPB(180)
L2243874-09G	Amber 250ml unpreserved	B	NA		3.2	Y	Absent		PA-PAHSIM-LVI(7)
L2243874-09H	Amber 250ml unpreserved	B	NA		3.2	Y	Absent		PA-PAHSIM-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Project Number:	200.00135.006	**Report Date:**	08/22/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHILADELPHIA REFINERY	**Lab Number:**	L2243874
Project Number:	200.00135.006	**Report Date:**	08/22/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/16/22

ALPHA Job #: L2243874

Client Information

Client: Ransom Consulting, LLC
Address: 2127 Hamilton Avenue
Trenton, NJ 08619
Phone: 215-901-4974
Fax:
Email: William.Schmidt@ransomenv.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Philadelphia Refinery AST Closure
Project Location: Philadelphia, PA
Project #: 200.00135.006
Project Manager: William Schmidt
ALPHA Quote #: ~~18599~~ 18559

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #: 3562

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

Report only attached project-specific analyte list of PADEP Leaded/Unleaded Gasoline and No. 2, 4, 5, and 6 Fuel Oil Shortlist. Run Naphthalene using Method 8270 ONLY!! Email results to edd@terraphase.com, William.Schmidt@ransomenv.com, and jjeray@hilcoglobal.com

ANALYSIS

SHORT LIST 1-6 | EDB (8-11) | VC PETRO + FSL

SAMPLE HANDLING
Filtration
☐ Done ☒ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
43874-01	GPU767-01-5501	8/12	1230	S	TS		
02	GPU767-02-5501		~~1230~~ 1235			1240	
03	GPU767-03-5501		1745				
04	GPU767-04-5501		~~1245~~ 1245			1255	
05	GPU767-05-5501		1330				
06	GPU767-06-5501		1340				
07	GPU767-07-5501		1350				
08	TB-081522		—				
09	FB-081522		1900				

Container Type	-	-	G	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
	8/15 1350		8/15/22 1350
	8/15/22 1535		8/15 1800
	8/15 2101		8/15/22 2100
	8/15/22		8/15/22 2700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

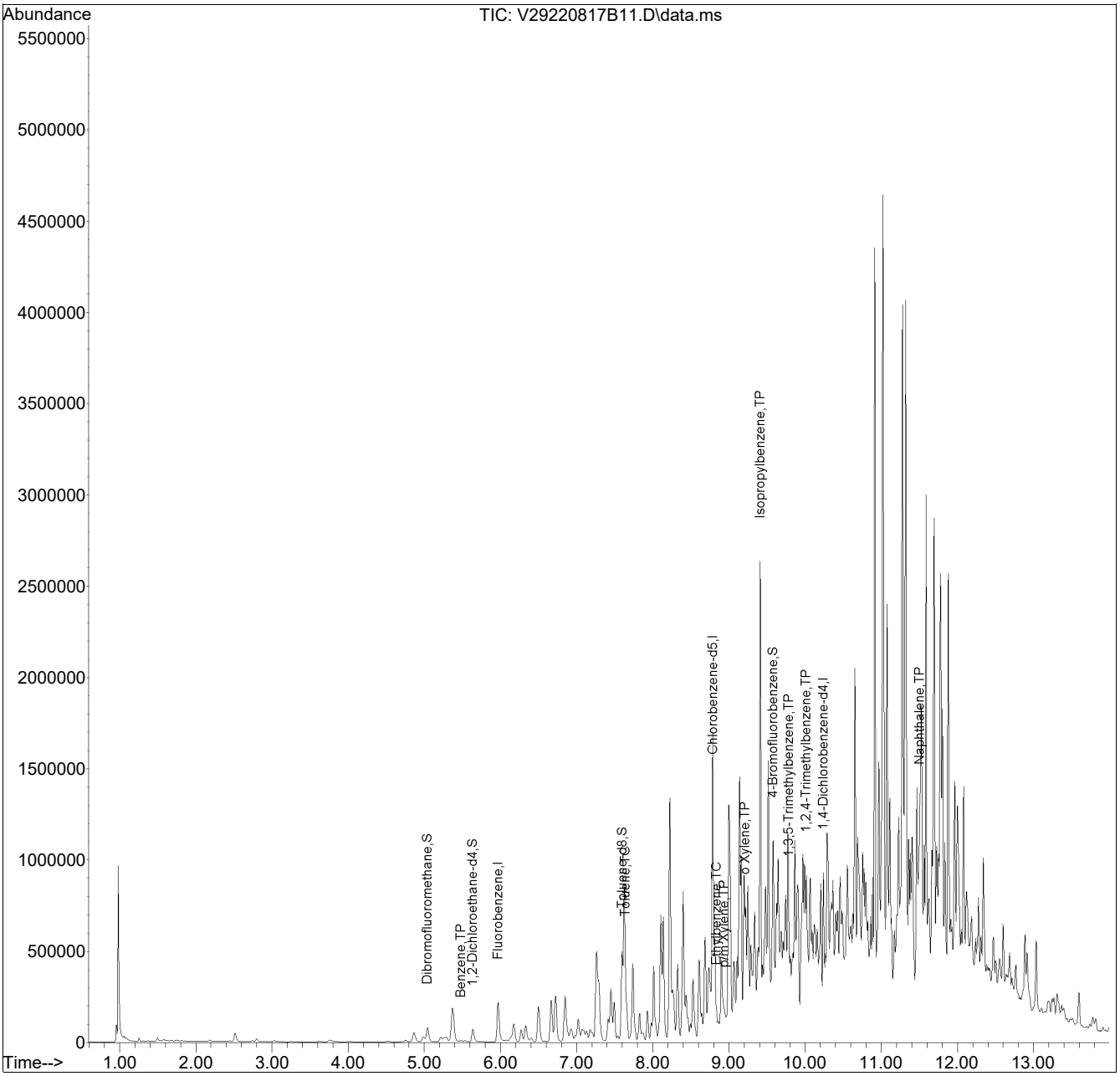
FORM NO: 01-01(G) (rev. 9-Mar-12)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA129\2022\220817B\
Data File : V29220817B11.D
Acq On : 17 Aug 2022 01:28 pm
Operator : VOA129:AJK
Sample : l2243874-02,31,34.63,5,,b
Misc : WG1676803,ICAL19173
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Aug 18 09:27:42 2022
Quant Method : I:\VOLATILES\VOA129\2022\220817B\V129_220712N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Thu Jul 14 08:00:36 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list17B\V29220817B01.D•



ANALYTICAL REPORT

Lab Number:	L2272207
Client:	Terraphase Engineering Inc. 100 Canal Pointe Boulevard Suite 108 Princeton, NJ 08540
ATTN:	Nick Scala
Phone:	(609) 236-8171
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	01/09/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2272207
Report Date: 01/09/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2272207-01	TG07-MW-03-3.0-3.5	SOIL	AST CLOSURE	12/21/22 09:30	12/22/22
L2272207-02	TG07-MW-03-3.0-3.5D	SOIL	AST CLOSURE	12/21/22 09:30	12/22/22
L2272207-03	TG07-MW-01-0.0-0.5	SOIL	AST CLOSURE	12/21/22 11:05	12/22/22
L2272207-04	TG07-MW-07-4.0-4.5	SOIL	AST CLOSURE	12/21/22 12:45	12/22/22
L2272207-05	TG07-MW-07-4.5-5.0	SOIL	AST CLOSURE	12/21/22 12:50	12/22/22
L2272207-06	TG07-MW-05-4.5-5.0	SOIL	AST CLOSURE	12/21/22 13:35	12/22/22
L2272207-07	TG07-MW-05-4.0-4.5	SOIL	AST CLOSURE	12/21/22 13:40	12/22/22
L2272207-08	GPR-799-03R-3.5-4.0	SOIL	AST CLOSURE	12/21/22 14:45	12/22/22
L2272207-09	GPR-799-03R-3.0-3.5	SOIL	AST CLOSURE	12/21/22 14:50	12/22/22
L2272207-10	TG07-MW-06-4.0-4.5	SOIL	AST CLOSURE	12/22/22 08:30	12/22/22
L2272207-11	TG07-MW-06-4.5-5.0	SOIL	AST CLOSURE	12/22/22 08:35	12/22/22
L2272207-12	TB-221222-1	WATER	AST CLOSURE	12/22/22 00:00	12/22/22

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

Case Narrative (continued)

Report Submission

January 09, 2023: This final report includes the results of the Volatile Organics and Semivolatile Organics analyses performed on L2272207-05, -06, -08, and -11. In addition, the Client IDs were amended on L2272207-08 and -09.

December 30, 2022: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2272207-04: The internal standard (IS) response for fluorobenzene (319%) and the surrogate recoveries for dibromofluoromethane (31%), 1,2-dichloroethane-d4 (139%), toluene-d8 (133%) and 4-bromofluorobenzene (466%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. The sample was re-analyzed on a larger dilution in order to quantitate results within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis; however, since the IS response was above method criteria, all associated compounds and surrogate recoveries are considered to have a potentially low bias. The results of both analyses are reported.

L2272207-07D: The surrogate recoveries were outside the acceptance criteria for dibromofluoromethane (68%) and 4-bromofluorobenzene (320%); however, re-analysis on a larger dilution was required in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The results of both analyses are reported; however, all associated compounds are considered to have a potential bias. A copy of the chromatogram is included as an attachment to this report.

L2272207-09: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (154%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

Case Narrative (continued)

L2272207-10D: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (139%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Semivolatile Organics

L2272207-03: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

L2272207-04D, -06D, -07D, -08D, -09D, and -11D: The sample has elevated detection limits due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 01/09/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-01
Client ID: TG07-MW-03-3.0-3.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 00:52
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0021	0.00021	1
Benzene	0.036		mg/kg	0.00052	0.00017	1
Toluene	ND		mg/kg	0.0010	0.00056	1
Ethylbenzene	ND		mg/kg	0.0010	0.00014	1
p/m-Xylene	0.0010	J	mg/kg	0.0021	0.00058	1
o-Xylene	0.00084	J	mg/kg	0.0010	0.00030	1
Xylenes, Total	0.0018	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.0068		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0021	0.00020	1
1,2,4-Trimethylbenzene	0.0026		mg/kg	0.0021	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-02
Client ID: TG07-MW-03-3.0-3.5D
Sample Location: AST CLOSURE

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 01:45
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	ND		mg/kg	0.00050	0.00016	1
Toluene	ND		mg/kg	0.00099	0.00054	1
Ethylbenzene	ND		mg/kg	0.00099	0.00014	1
p/m-Xylene	0.00099	J	mg/kg	0.0020	0.00055	1
o-Xylene	0.00087	J	mg/kg	0.00099	0.00029	1
Xylenes, Total	0.0019	J	mg/kg	0.00099	0.00029	1
Isopropylbenzene	0.0074		mg/kg	0.00099	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	0.0018	J	mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-03
Client ID: TG07-MW-01-0.0-0.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 11:05
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 01:19
Analyst: NLK
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0017	0.00017	1
Benzene	0.0088		mg/kg	0.00043	0.00014	1
Toluene	ND		mg/kg	0.00086	0.00047	1
Ethylbenzene	ND		mg/kg	0.00086	0.00012	1
p/m-Xylene	0.00084	J	mg/kg	0.0017	0.00048	1
o-Xylene	0.00071	J	mg/kg	0.00086	0.00025	1
Xylenes, Total	0.0016	J	mg/kg	0.00086	0.00025	1
Isopropylbenzene	ND		mg/kg	0.00086	0.00009	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0017	0.00017	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0017	0.00029	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-04
Client ID: TG07-MW-07-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:45
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 03:57
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.11	0.011	1
Benzene	80.	E	mg/kg	0.028	0.0093	1
Toluene	150	E	mg/kg	0.056	0.030	1
Ethylbenzene	48.	E	mg/kg	0.056	0.0079	1
p/m-Xylene	130	E	mg/kg	0.11	0.032	1
o-Xylene	45.	E	mg/kg	0.056	0.016	1
Isopropylbenzene	130	E	mg/kg	0.056	0.0061	1
1,3,5-Trimethylbenzene	56.	E	mg/kg	0.11	0.011	1
1,2,4-Trimethylbenzene	77.	E	mg/kg	0.11	0.019	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**139**	Q	70-130
Toluene-d8	**133**	Q	70-130
4-Bromofluorobenzene	**466**	Q	70-130
Dibromofluoromethane	**31**	Q	70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-04 D
Client ID: TG07-MW-07-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:45
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/30/22 08:33
Analyst: NLK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	22	2.3	200
Benzene	2500		mg/kg	5.6	1.9	200
Toluene	240		mg/kg	11	6.1	200
Ethylbenzene	48.		mg/kg	11	1.6	200
p/m-Xylene	240		mg/kg	22	6.3	200
o-Xylene	54.		mg/kg	11	3.3	200
Xylenes, Total	290		mg/kg	11	3.3	200
Isopropylbenzene	750		mg/kg	11	1.2	200
1,3,5-Trimethylbenzene	57.		mg/kg	22	2.2	200
1,2,4-Trimethylbenzene	140		mg/kg	22	3.8	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-05 D2
Client ID: TG07-MW-07-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:50
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/04/23 19:35
Analyst: AJK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	3700		mg/kg	29	9.7	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-05 D
Client ID: TG07-MW-07-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:50
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/04/23 14:02
Analyst: MKS
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	12	1.2	100
Benzene	4500	E	mg/kg	2.9	0.97	100
Toluene	540		mg/kg	5.8	3.2	100
Ethylbenzene	93.		mg/kg	5.8	0.82	100
p/m-Xylene	460		mg/kg	12	3.3	100
o-Xylene	100		mg/kg	5.8	1.7	100
Xylenes, Total	560		mg/kg	5.8	1.7	100
Isopropylbenzene	1600		mg/kg	5.8	0.64	100
1,3,5-Trimethylbenzene	140		mg/kg	12	1.1	100
1,2,4-Trimethylbenzene	330		mg/kg	12	1.9	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-06 D2
Client ID: TG07-MW-05-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 13:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/04/23 12:59
Analyst: MKS
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	1700		mg/kg	4.9	1.6	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-06 D
Client ID: TG07-MW-05-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 13:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/02/23 21:52
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	9.9	0.99	100
Benzene	1800	E	mg/kg	2.5	0.82	100
Toluene	230		mg/kg	4.9	2.7	100
Ethylbenzene	12.		mg/kg	4.9	0.70	100
p/m-Xylene	57.		mg/kg	9.9	2.8	100
o-Xylene	9.2		mg/kg	4.9	1.4	100
Xylenes, Total	66.		mg/kg	4.9	1.4	100
Isopropylbenzene	99.		mg/kg	4.9	0.54	100
1,3,5-Trimethylbenzene	14.		mg/kg	9.9	0.95	100
1,2,4-Trimethylbenzene	27.		mg/kg	9.9	1.6	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-07 D2 Date Collected: 12/21/22 13:40
Client ID: TG07-MW-05-4.0-4.5 Date Received: 12/22/22
Sample Location: AST CLOSURE Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/30/22 08:14
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	24	2.4	200
Benzene	2300		mg/kg	5.9	2.0	200
Toluene	350		mg/kg	12	6.4	200
Ethylbenzene	25.		mg/kg	12	1.6	200
p/m-Xylene	120		mg/kg	24	6.6	200
o-Xylene	21.		mg/kg	12	3.4	200
Xylenes, Total	140		mg/kg	0.12	0.034	200
Isopropylbenzene	240		mg/kg	12	1.3	200
1,3,5-Trimethylbenzene	33.		mg/kg	24	2.3	200
1,2,4-Trimethylbenzene	65.		mg/kg	24	3.9	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-07 D
Client ID: TG07-MW-05-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 13:40
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 04:23
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.24	0.024	2
Benzene	290	E	mg/kg	0.059	0.020	2
Toluene	300	E	mg/kg	0.12	0.064	2
Ethylbenzene	26.		mg/kg	0.12	0.016	2
p/m-Xylene	110	E	mg/kg	0.24	0.066	2
o-Xylene	18.		mg/kg	0.12	0.034	2
Isopropylbenzene	150	E	mg/kg	0.12	0.013	2
1,3,5-Trimethylbenzene	35.		mg/kg	0.24	0.023	2
1,2,4-Trimethylbenzene	70.	E	mg/kg	0.24	0.039	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	**320**	Q	70-130
Dibromofluoromethane	**68**	Q	70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-08
Client ID: GPR-799-03R-3.5-4.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 14:45
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/04/23 14:23
Analyst: MKS
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.16	0.016	1
Benzene	1.2		mg/kg	0.040	0.013	1
Toluene	0.44		mg/kg	0.079	0.043	1
Ethylbenzene	0.13		mg/kg	0.079	0.011	1
p/m-Xylene	0.43		mg/kg	0.16	0.044	1
o-Xylene	0.098		mg/kg	0.079	0.023	1
Xylenes, Total	0.53		mg/kg	0.079	0.023	1
Isopropylbenzene	8.2		mg/kg	0.079	0.0086	1
1,3,5-Trimethylbenzene	0.63		mg/kg	0.16	0.015	1
1,2,4-Trimethylbenzene	0.80		mg/kg	0.16	0.026	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-09
Client ID: GPR-799-03R-3.0-3.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 14:50
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 21:15
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.12	0.012	1
Benzene	2.6		mg/kg	0.031	0.010	1
Toluene	0.089		mg/kg	0.062	0.034	1
Ethylbenzene	0.025	J	mg/kg	0.062	0.0088	1
p/m-Xylene	0.16		mg/kg	0.12	0.035	1
o-Xylene	0.11		mg/kg	0.062	0.018	1
Xylenes, Total	0.27		mg/kg	0.062	0.018	1
Isopropylbenzene	0.78		mg/kg	0.062	0.0068	1
1,3,5-Trimethylbenzene	0.018	J	mg/kg	0.12	0.012	1
1,2,4-Trimethylbenzene	0.043	J	mg/kg	0.12	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	**154**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-10 D2
Client ID: TG07-MW-06-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/29/22 22:40
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	170		mg/kg	6.2	2.0	200
Isopropylbenzene	3400		mg/kg	12	1.3	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-10 D
Client ID: TG07-MW-06-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 12/28/22 22:34
Analyst: NLK
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.2	0.12	10
Benzene	220	E	mg/kg	0.31	0.10	10
Toluene	3.6		mg/kg	0.62	0.33	10
Ethylbenzene	2.7		mg/kg	0.62	0.087	10
p/m-Xylene	2.1		mg/kg	1.2	0.34	10
o-Xylene	0.53	J	mg/kg	0.62	0.18	10
Xylenes, Total	2.6	J	mg/kg	0.62	0.18	10
Isopropylbenzene	1400	E	mg/kg	0.62	0.067	10
1,3,5-Trimethylbenzene	0.28	J	mg/kg	1.2	0.12	10
1,2,4-Trimethylbenzene	4.9		mg/kg	1.2	0.20	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	**139**	Q	70-130
Dibromofluoromethane	88		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-11 D2
Client ID: TG07-MW-06-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/04/23 13:20
Analyst: MKS
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1900		mg/kg	12	1.3	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-11 D
Client ID: TG07-MW-06-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/02/23 22:12
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	12	1.2	100
Benzene	140		mg/kg	3.0	0.99	100
Toluene	3.8	J	mg/kg	6.0	3.2	100
Ethylbenzene	1.0	J	mg/kg	6.0	0.84	100
p/m-Xylene	ND		mg/kg	12	3.4	100
o-Xylene	ND		mg/kg	6.0	1.7	100
Xylenes, Total	ND		mg/kg	6.0	1.7	100
Isopropylbenzene	2000	E	mg/kg	6.0	0.65	100
1,3,5-Trimethylbenzene	ND		mg/kg	12	1.2	100
1,2,4-Trimethylbenzene	2.8	J	mg/kg	12	2.0	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-12
Client ID: TB-221222-1
Sample Location: AST CLOSURE

Date Collected: 12/22/22 00:00
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/28/22 09:04
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	111		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/27/22 20:03
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03 Batch: WG1727950-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/27/22 20:03
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,07 Batch: WG1728132-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/28/22 06:25
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 12 Batch: WG1728159-12					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/28/22 17:15
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09-10 Batch: WG1728506-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	0.011	J	mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	0.045	J	mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	96		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/30/22 07:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04,07 Batch: WG1728860-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 12/29/22 17:46
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 10 Batch: WG1728863-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/02/23 15:41
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 06,11 Batch: WG1729546-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/04/23 09:51
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 05-06,08,11 Batch: WG1730273-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2272207

Project Number: P044.001.002 **Report Date:** 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/04/23 18:25
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 05 Batch: WG1730287-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG1727950-3 WG1727950-4								
Methyl tert butyl ether	107		110		66-130	3		30
Benzene	113		114		70-130	1		30
Toluene	109		110		70-130	1		30
Ethylbenzene	117		118		70-130	1		30
p/m-Xylene	104		105		70-130	1		30
o-Xylene	101		103		70-130	2		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	114		114		70-130	0		30
1,2,4-Trimethylbenzene	115		114		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	94		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,07 Batch: WG1728132-3 WG1728132-4								
Methyl tert butyl ether	107		110		66-130	3		30
Benzene	113		114		70-130	1		30
Toluene	109		110		70-130	1		30
Ethylbenzene	117		118		70-130	1		30
p/m-Xylene	104		105		70-130	1		30
o-Xylene	101		103		70-130	2		30
Isopropylbenzene	104		104		70-130	0		30
1,3,5-Trimethylbenzene	114		114		70-130	0		30
1,2,4-Trimethylbenzene	115		114		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	94		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 12 Batch: WG1728159-10 WG1728159-11								
Methyl tert butyl ether	85		87		63-130	2		20
Benzene	93		96		70-130	3		20
Toluene	92		94		70-130	2		20
Ethylbenzene	95		97		70-130	2		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
Isopropylbenzene	96		100		70-130	4		20
1,3,5-Trimethylbenzene	87		91		64-130	4		20
1,2,4-Trimethylbenzene	85		90		70-130	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		108		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	103		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09-10 Batch: WG1728506-3 WG1728506-4								
Methyl tert butyl ether	98		98		66-130	0		30
Benzene	104		102		70-130	2		30
Toluene	105		102		70-130	3		30
Ethylbenzene	111		108		70-130	3		30
p/m-Xylene	102		99		70-130	3		30
o-Xylene	101		98		70-130	3		30
Isopropylbenzene	97		95		70-130	2		30
1,3,5-Trimethylbenzene	108		105		70-130	3		30
1,2,4-Trimethylbenzene	109		106		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		92		70-130
Toluene-d8	103		102		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	91		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04,07 Batch: WG1728860-3 WG1728860-4								
Methyl tert butyl ether	93		92		66-130	1		30
Benzene	98		92		70-130	6		30
Toluene	96		92		70-130	4		30
Ethylbenzene	98		93		70-130	5		30
p/m-Xylene	100		96		70-130	4		30
o-Xylene	98		95		70-130	3		30
Isopropylbenzene	97		93		70-130	4		30
1,3,5-Trimethylbenzene	98		95		70-130	3		30
1,2,4-Trimethylbenzene	96		95		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		96		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	97		100		70-130
Dibromofluoromethane	99		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 10 Batch: WG1728863-3 WG1728863-4								
Methyl tert butyl ether	93		94		66-130	1		30
Benzene	97		97		70-130	0		30
Toluene	97		97		70-130	0		30
Ethylbenzene	98		100		70-130	2		30
p/m-Xylene	100		102		70-130	2		30
o-Xylene	99		100		70-130	1		30
Isopropylbenzene	98		98		70-130	0		30
1,3,5-Trimethylbenzene	99		99		70-130	0		30
1,2,4-Trimethylbenzene	98		98		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		97		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	99		98		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 06,11 Batch: WG1729546-3 WG1729546-4								
Methyl tert butyl ether	100		96		66-130	4		30
Benzene	101		95		70-130	6		30
Toluene	98		93		70-130	5		30
Ethylbenzene	99		93		70-130	6		30
p/m-Xylene	102		95		70-130	7		30
o-Xylene	101		95		70-130	6		30
Isopropylbenzene	97		91		70-130	6		30
1,3,5-Trimethylbenzene	99		93		70-130	6		30
1,2,4-Trimethylbenzene	99		93		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		96		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05-06,08,11 Batch: WG1730273-3 WG1730273-4								
Methyl tert butyl ether	99		101		66-130	2		30
Benzene	96		100		70-130	4		30
Toluene	96		98		70-130	2		30
Ethylbenzene	97		99		70-130	2		30
p/m-Xylene	98		100		70-130	2		30
o-Xylene	99		100		70-130	1		30
Isopropylbenzene	98		102		70-130	4		30
1,3,5-Trimethylbenzene	100		102		70-130	2		30
1,2,4-Trimethylbenzene	99		102		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	102		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05 Batch: WG1730287-3 WG1730287-4								
Methyl tert butyl ether	89		90		66-130	1		30
Benzene	90		90		70-130	0		30
Toluene	90		88		70-130	2		30
Ethylbenzene	92		90		70-130	2		30
p/m-Xylene	92		89		70-130	3		30
o-Xylene	88		86		70-130	2		30
Isopropylbenzene	92		90		70-130	2		30
1,3,5-Trimethylbenzene	92		90		70-130	2		30
1,2,4-Trimethylbenzene	88		87		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		100		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	106		108		70-130
Dibromofluoromethane	94		94		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-01
Client ID: TG07-MW-03-3.0-3.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/27/22 14:02
Analyst: MG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.081		mg/kg	0.038	0.023	1
Benzo(a)pyrene	0.067	J	mg/kg	0.15	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**121**	Q	23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	50		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-02
Client ID: TG07-MW-03-3.0-3.5D
Sample Location: AST CLOSURE

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/27/22 14:26
Analyst: MG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.098		mg/kg	0.038	0.023	1
Benzo(a)pyrene	0.085	J	mg/kg	0.15	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**134**	Q	23-120
2-Fluorobiphenyl	75		30-120
4-Terphenyl-d14	57		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-03
Client ID: TG07-MW-01-0.0-0.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 11:05
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/27/22 14:50
Analyst: MG
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.11	0.070	1
Benzo(a)pyrene	0.62		mg/kg	0.46	0.14	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	49		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-04 D
Client ID: TG07-MW-07-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:45
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/30/22 07:02
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	36.		mg/kg	0.39	0.24	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.47	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**163**	Q	23-120
2-Fluorobiphenyl	74		30-120
4-Terphenyl-d14	61		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-05 D
Client ID: TG07-MW-07-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 12:50
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/03/23 16:59
Analyst: CMM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 12/31/22 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	52.		mg/kg	0.38	0.23	10
Benzo(a)pyrene	ND		mg/kg	1.5	0.47	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**479**	Q	23-120
2-Fluorobiphenyl	88		30-120
4-Terphenyl-d14	87		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-06 D
Client ID: TG07-MW-05-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 13:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/03/23 17:23
Analyst: CMM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 12/31/22 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.0		mg/kg	0.19	0.12	5
Benzo(a)pyrene	ND		mg/kg	0.77	0.23	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	67		30-120
4-Terphenyl-d14	81		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-07 D
Client ID: TG07-MW-05-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 13:40
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/30/22 06:39
Analyst: CMM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.5		mg/kg	0.19	0.12	5
Benzo(a)pyrene	ND		mg/kg	0.77	0.23	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	119		23-120
2-Fluorobiphenyl	80		30-120
4-Terphenyl-d14	75		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-08 D
Client ID: GPR-799-03R-3.5-4.0
Sample Location: AST CLOSURE

Date Collected: 12/21/22 14:45
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/03/23 17:47
Analyst: CMM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 12/31/22 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	2.2		mg/kg	0.18	0.11	5
Benzo(a)pyrene	0.58	J	mg/kg	0.71	0.22	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	79		30-120
4-Terphenyl-d14	85		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-09 D
Client ID: GPR-799-03R-3.0-3.5
Sample Location: AST CLOSURE

Date Collected: 12/21/22 14:50
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/30/22 08:13
Analyst: CMM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.36		mg/kg	0.20	0.12	5
Benzo(a)pyrene	1.1		mg/kg	0.80	0.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	92		30-120
4-Terphenyl-d14	89		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-10
Client ID: TG07-MW-06-4.0-4.5
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:30
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 12/27/22 16:26
Analyst: MG
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	5.4		mg/kg	0.037	0.022	1
Benzo(a)pyrene	0.18		mg/kg	0.15	0.045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**163**	Q	23-120
2-Fluorobiphenyl	57		30-120
4-Terphenyl-d14	58		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2272207
Project Number: P044.001.002
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-11 D
Client ID: TG07-MW-06-4.5-5.0
Sample Location: AST CLOSURE

Date Collected: 12/22/22 08:35
Date Received: 12/22/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/03/23 18:11
Analyst: CMM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 12/31/22 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.37		mg/kg	0.18	0.11	5
Benzo(a)pyrene	ND		mg/kg	0.73	0.22	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	64		30-120
4-Terphenyl-d14	78		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/27/22 11:14
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 12/23/22 22:26

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,07,09-10 Batch: WG1727281-1					
Naphthalene	ND		mg/kg	0.16	0.020
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	115		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	86		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 12/31/22 11:01
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 12/31/22 00:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05-06,08,11 Batch: WG1729046-1					
Naphthalene	ND		mg/kg	0.032	0.020
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	77		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,07,09-10 Batch: WG1727281-2 WG1727281-3								
Naphthalene	76		64		40-140	17		50
Benzo(a)pyrene	87		75		40-140	15		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	114		95		23-120
2-Fluorobiphenyl	83		70		30-120
4-Terphenyl-d14	81		68		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-06,08,11 Batch: WG1729046-2 WG1729046-3								
Naphthalene	56		59		40-140	5		50
Benzo(a)pyrene	67		70		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	77		81		23-120
2-Fluorobiphenyl	60		62		30-120
4-Terphenyl-d14	64		65		18-120

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-01
Client ID: TG07-MW-03-3.0-3.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.6		%	0.100	NA	1	-	12/23/22 11:31	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-02
Client ID: TG07-MW-03-3.0-3.5D
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 12/21/22 09:30
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.6		%	0.100	NA	1	-	12/23/22 11:31	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-03
Client ID: TG07-MW-01-0.0-0.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 11:05
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.5		%	0.100	NA	1	-	12/23/22 11:31	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-04
Client ID: TG07-MW-07-4.0-4.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 12:45
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	12/23/22 11:31	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-05
Client ID: TG07-MW-07-4.5-5.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 12:50
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.7		%	0.100	NA	1	-	12/31/22 08:39	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-06
Client ID: TG07-MW-05-4.5-5.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 13:35
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.6		%	0.100	NA	1	-	12/31/22 08:39	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-07
Client ID: TG07-MW-05-4.0-4.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil

Date Collected: 12/21/22 13:40
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.8		%	0.100	NA	1	-	12/23/22 11:40	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-08
Client ID: GPR-799-03R-3.5-4.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 14:45
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.1		%	0.100	NA	1	-	12/31/22 08:39	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-09
Client ID: GPR-799-03R-3.0-3.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/21/22 14:50
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	12/23/22 11:40	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-10
Client ID: TG07-MW-06-4.0-4.5
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/22/22 08:30
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.0		%	0.100	NA	1	-	12/23/22 11:40	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2272207
Report Date: 01/09/23

SAMPLE RESULTS

Lab ID: L2272207-11
Client ID: TG07-MW-06-4.5-5.0
Sample Location: AST CLOSURE
Sample Depth:
Matrix: Soil
Date Collected: 12/22/22 08:35
Date Received: 12/22/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.6		%	0.100	NA	1	-	12/31/22 08:39	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2272207

Report Date: 01/09/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1727081-1 QC Sample: L2272099-01 Client ID: DUP Sample						
Solids, Total	63.0	60.8	%	4		20
General Chemistry - Westborough Lab Associated sample(s): 07,09-10 QC Batch ID: WG1727086-1 QC Sample: L2272059-01 Client ID: DUP Sample						
Solids, Total	91.8	92.9	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 05-06,08,11 QC Batch ID: WG1729078-1 QC Sample: L2271969-20 Client ID: DUP Sample						
Solids, Total	45.2	44.4	%	2		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2272207
Report Date: 01/09/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2272207-01A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-01B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-01C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-01D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-01E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-01X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-01Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-01Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-02A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-02B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-02C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-02D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-02E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-02X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-02Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-02Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-03A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-03B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-03C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-03D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-03E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-03X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-03Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2272207
Report Date: 01/09/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2272207-03Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-04A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-04B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-04C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-04D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-04E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-04X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-04Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-04Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-05A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-05B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-05C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-05D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-05E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-05X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-05Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-05Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-06A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-06B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-06C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-06D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-06E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-06X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-06Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-06Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-07A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-07B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-07C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2272207
Report Date: 01/09/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2272207-07D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-07E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-07X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-07Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-07Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-08A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-08B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-08C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-08D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-08E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-08X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-08Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-08Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-09A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-09B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-09C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-09D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-09E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-09X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-09Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-09Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-10A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-10B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-10C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-10D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-10E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-10X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-10Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2272207
Report Date: 01/09/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2272207-10Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-11A	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-11B	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-11C	5 gram Encore Sampler	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-11D	Plastic 2oz unpreserved for TS	A	NA		4.0	Y	Absent		TS(7)
L2272207-11E	Glass 120ml/4oz unpreserved	A	NA		4.0	Y	Absent		PA-PAH(14)
L2272207-11X	Vial MeOH preserved split	A	NA		4.0	Y	Absent		PA-8260HLW(14)
L2272207-11Y	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-11Z	Vial Water preserved split	A	NA		4.0	Y	Absent	23-DEC-22 06:52	PA-8260HLW(14)
L2272207-12A	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)
L2272207-12B	Vial HCl preserved	A	NA		4.0	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2272207
Project Number:	P044.001.002	**Report Date:**	01/09/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 12/23/22

ALPHA Job #: L2272207

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 E Hector St, Suite 416
Conshohocken, PA 19428
Phone: 215-297-3502
Fax:
Email: Nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery AST Closure
Project Location:
Project #: P044.001.002
Project Manager: Nick.scala@terraphase.com
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
Equis Format EDD

ANALYSIS: 8260- Benzene, Ethylbenzene, Methyl tert-butyl ether, Toluene, Xylenes, 1,3,5-TMB, 1,2,4-TMB; 8270- Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials				Sample Specific Comments
T2207-01	T607-MW-03-3.0-3.5	12/21/22	930	SO	SMM	X		X	Analyze
-02	T607-MW-03-3.0-3.5D	12/21/22	930	SO	SMM	X		X	Analyze
-03	T607-MW-01-0.0-0.5	12/21/22	1105	SO	SMM	X		X	Analyze
-04	T607-MW-07-4.0-4.5	12/21/22	1245	SO	SMM	X		X	Analyze, * Potentially Hazardous
-05	T607-MW-07-4.5-5.0	12/21/22	1250	SO	SMM	H		H	Hold, Potentially Hazardous
-06	T607-MW-05-4.5-5.0	12/21/22	1555	SO	SMM	H		H	Hold
-07	T607-MW-05-4.0-4.5	12/21/22	1340	SO	SMM	X		X	Analyze
-08	T607-MW-04-3.5-4.0	12/21/22	1445	SO	SMM	H		H	Hold
-09	T607-MW-04-3.0-3.5	12/21/22	1450	SO	SMM	X		X	Analyze
-10	T607-MW-06-4.0-4.5	12/22/22	830	SO	SMM	X		X	Analyze

Container Type															
Preservative															

Relinquished By:	Date/Time	Received By:	Date/Time
	12/22/22 1355		12.20 13:59
AM	12.22 1800		12/22/22 1800
	12/23/22 2:10		12/23/22 0210

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/23/22

ALPHA Job #: L2272207

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 E Hector St, Suite 416
Conshohocken, Pa 19428
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Phila Refinery AST Closure
Project Location:
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
Equis Former EDD

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 8260 - Benzene, Ethylbenzene, 1,2,4-TMB, Naphthalene, Isopropylbenzene, 1,3,5-TMB, Methyl tert-butyl ether, Toluene, Xylenes	ANALYSIS: 8270 - Benzo(a)Pyrene	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do; Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
72207-11	T607-MW-06-4.5-5.0	12/22/22	835	SO	SMM	A	A		Hold	
-12	TB-221222-1	12/22/22	1300	TB	SMM	X			Analyze	

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	12/22/22 1355		12/27 12:55
	12/27 1800		12/28/22 1800
	12/28/22 2100		12-29-22 0940

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Mohammad 12/23/22 02:10 0210

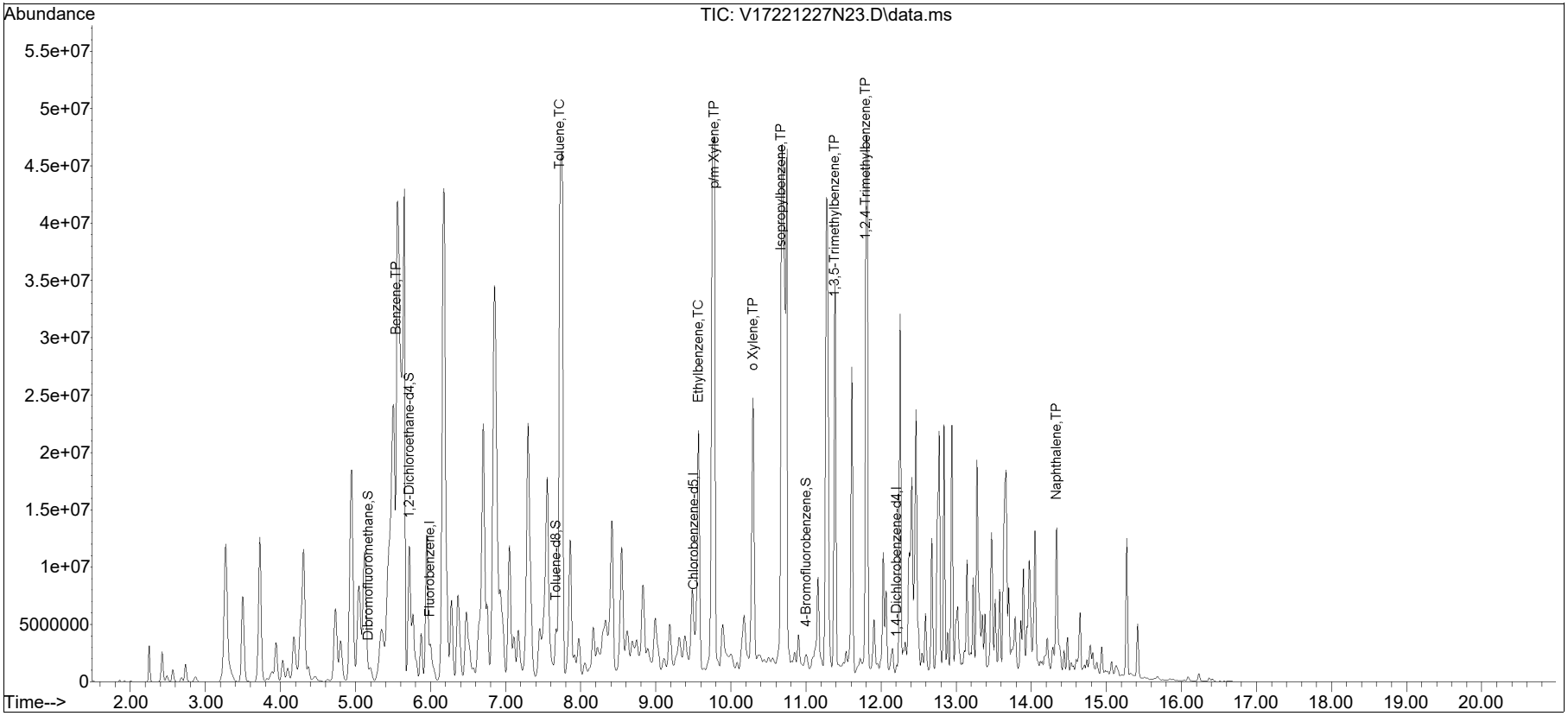
FORM NO: 01-01 (rev. 14-OCT-07)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA117\2022\221227N\
Data File : V17221227N23.D
Acq On : 28 Dec 2022 03:57 am
Operator : VOA117:NLK
Sample : l2272207-04,31h,6.30,5,0.100,,x,r2f
Misc : WG1728132,ICAL19514
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Dec 28 12:41:56 2022
Quant Method : I:\VOLATILES\VOA117\2022\221227N\V117_221121N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 22 14:12:03 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list27N\V17221227N01.D•

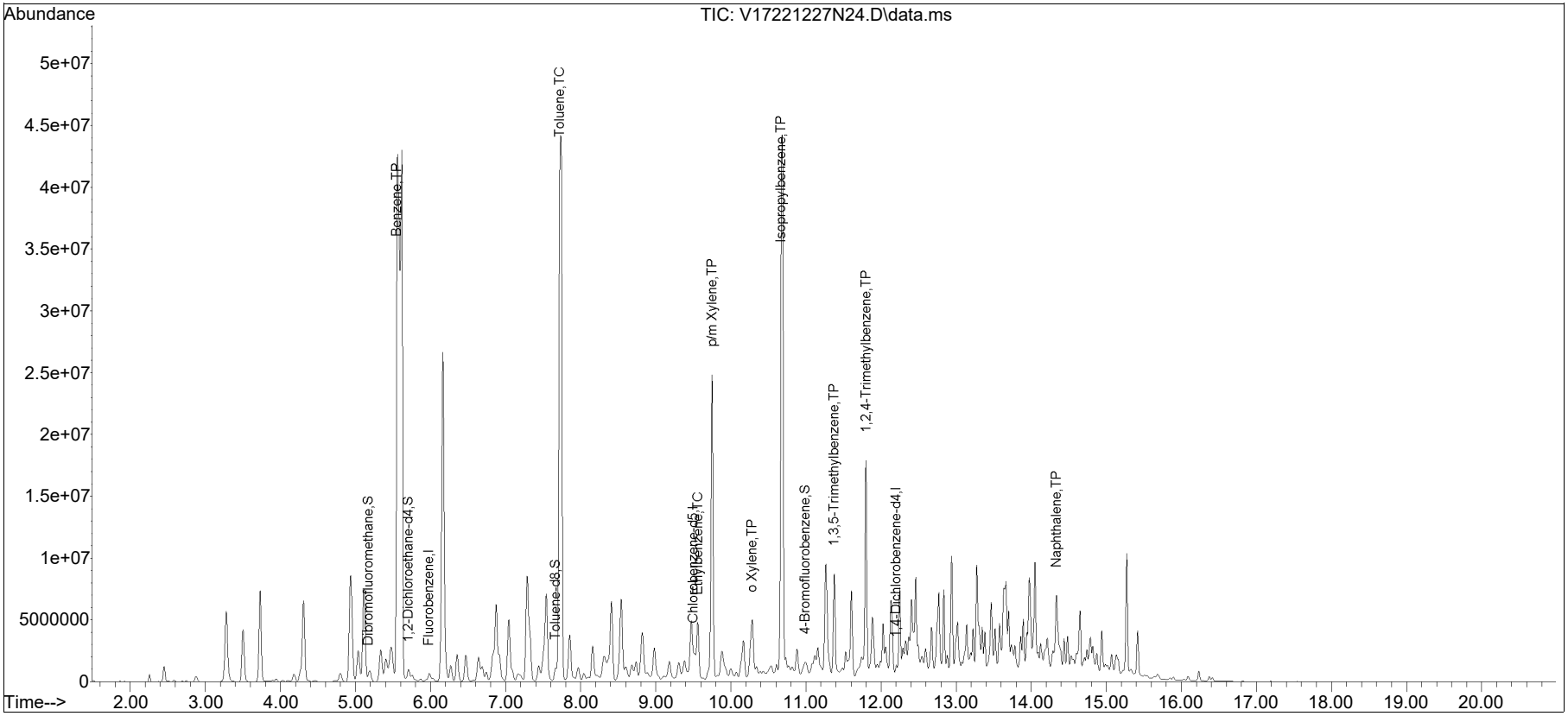


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA117\2022\221227N\
Data File : V17221227N24.D
Acq On : 28 Dec 2022 04:23 am
Operator : VOA117:NLK
Sample : l2272207-07D,31h,5.76,5,0.050,,x,r2f
Misc : WG1728132,ICAL19514
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Dec 28 12:43:29 2022
Quant Method : I:\VOLATILES\VOA117\2022\221227N\V117_221121N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 22 14:12:03 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list27N\V17221227N01.D•



Quantitation Report (QT Reviewed)

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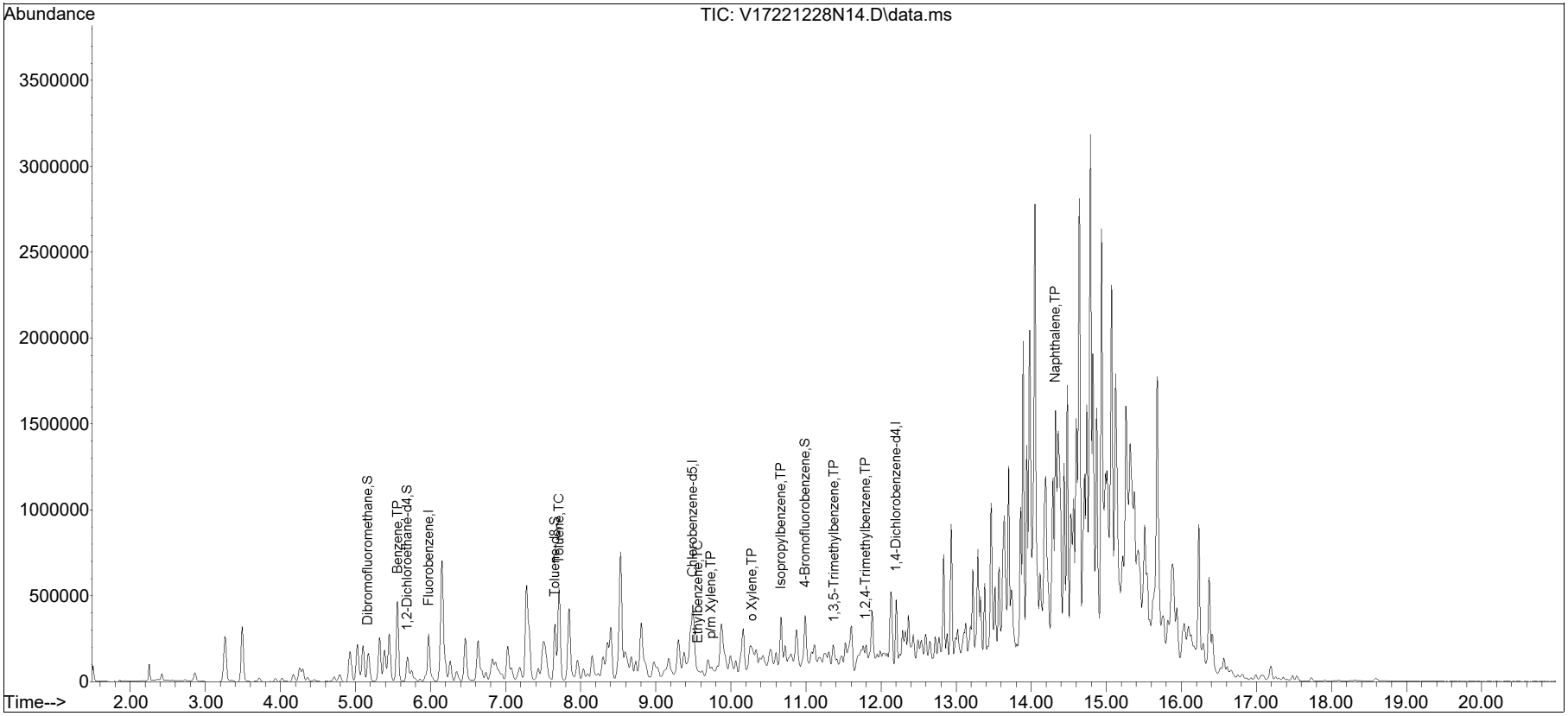
Data File : V17221228N14.D
Acq On : 28 Dec 2022 09:15 pm
Operator : VOA117:NLK
Sample : l2272207-09,31h,5.86,5,0.100,,x,r2f
Misc : WG1728506,ICAL19514
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 29 10:54:02 2022
Quant Method : I:\VOLATILES\VOA117\2022\221228N\V117_221121N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 22 14:12:03 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list28N\V17221228N01.D•



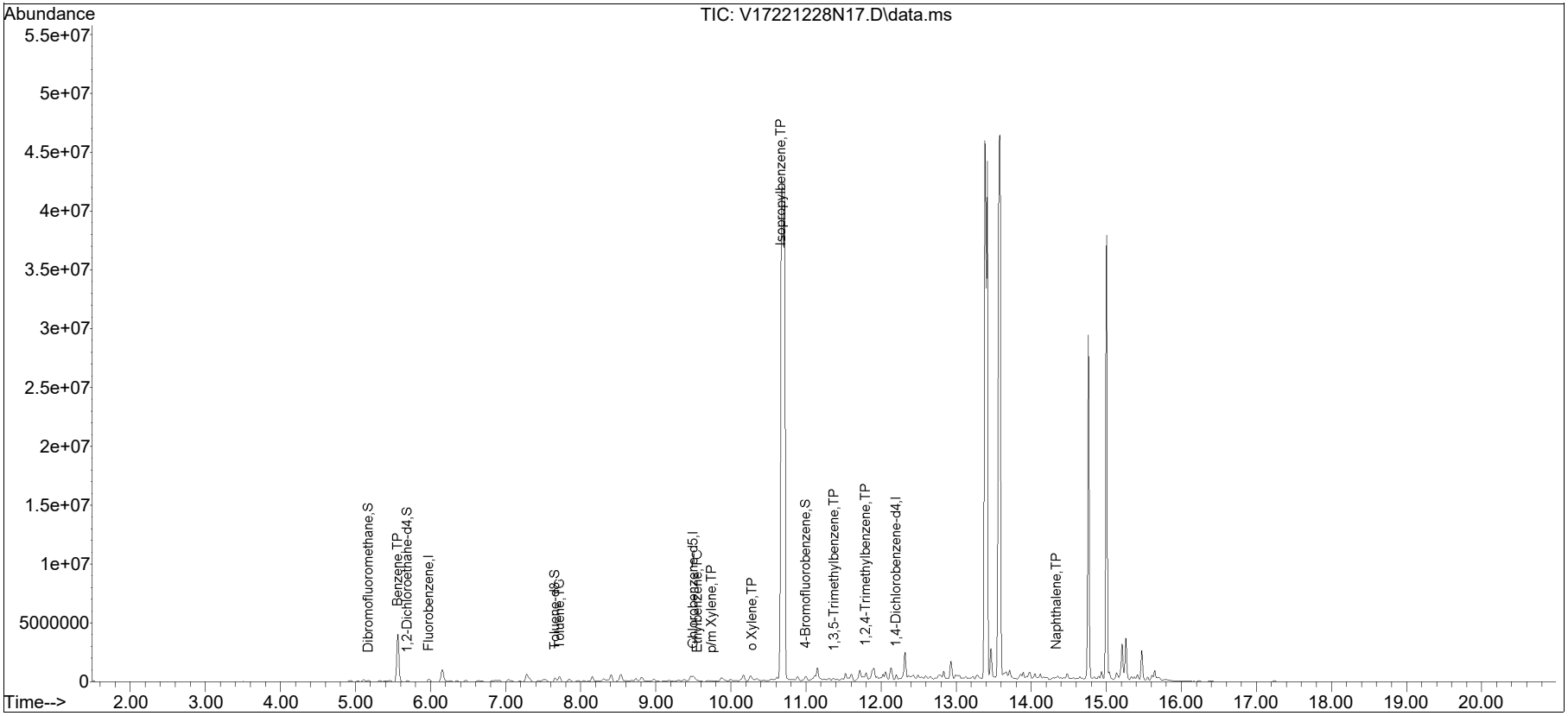
V117_221121N_8260.m Thu Dec 29 11:48:41 2022 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA117\2022\221228N\
Data File : V17221228N17.D
Acq On : 28 Dec 2022 10:34 pm
Operator : VOA117:NLK
Sample : l2272207-10d,31h,4.96,5,0.01,,x,r2f
Misc : WG1728506,ICAL19514
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 29 10:58:13 2022
Quant Method : I:\VOLATILES\VOA117\2022\221228N\V117_221121N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Nov 22 14:12:03 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list28N\V17221228N01.D•



ANALYTICAL REPORT

Lab Number:	L2300373
Client:	Terraphase Engineering Inc. 1100 East Hector Street Suite 416 Conshohocken, PA 19428
ATTN:	Nick Scala
Phone:	(215) 297-3502
Project Name:	FORMER PHILADELPHIA REFINERY
Project Number:	P044.001.002
Report Date:	01/13/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300373-01	GPR794-09-1.5-2.0	SOIL	Not Specified	01/03/23 08:45	01/04/23
L2300373-02	GPR794-09-2.0-2.5	SOIL	Not Specified	01/03/23 08:55	01/04/23
L2300373-03	GPR794-09-2.0-2.5D	SOIL	Not Specified	01/03/23 08:55	01/04/23
L2300373-04	GPR794-09-3.0-3.5	SOIL	Not Specified	01/03/23 09:05	01/04/23
L2300373-05	GPR794-10-1.5-2.0	SOIL	Not Specified	01/03/23 09:45	01/04/23
L2300373-06	GPR794-10-2.0-2.5	SOIL	Not Specified	01/03/23 09:50	01/04/23
L2300373-07	GPR790-08-0.0-0.5	SOIL	Not Specified	01/03/23 10:20	01/04/23
L2300373-08	TG07-MW-04-1.5-2.0	SOIL	Not Specified	01/03/23 11:00	01/04/23
L2300373-09	TG07-MW-04-2.0-2.5	SOIL	Not Specified	01/03/23 11:10	01/04/23
L2300373-10	GPR799-08-1.0-1.5	SOIL	Not Specified	01/03/23 11:30	01/04/23
L2300373-11	GPR799-08-3.0-3.5	SOIL	Not Specified	01/03/23 11:40	01/04/23
L2300373-12	GPR791-09-0.0-0.5	SOIL	Not Specified	01/03/23 12:05	01/04/23
L2300373-13	GPR791-09-2.0-2.5	SOIL	Not Specified	01/03/23 12:10	01/04/23
L2300373-14	GPR791-09-2.5-3.0	SOIL	Not Specified	01/03/23 12:15	01/04/23
L2300373-15	GPR793-03R-2.5-3.0	SOIL	Not Specified	01/03/23 12:45	01/04/23
L2300373-16	GPR793-03R-3.0-3.5	SOIL	Not Specified	01/03/23 13:00	01/04/23
L2300373-17	GPR792-03R-1.5-2.0	SOIL	Not Specified	01/03/23 13:20	01/04/23
L2300373-18	GPR792-03R-2.0-2.5	SOIL	Not Specified	01/03/23 13:30	01/04/23
L2300373-19	GPR1117-03R-0.0-0.5	SOIL	Not Specified	01/03/23 14:40	01/04/23
L2300373-20	PB-847-15R-6.0-6.5	SOIL	Not Specified	01/04/23 09:00	01/04/23
L2300373-21	PB-847-15R-17.0-17.5	SOIL	Not Specified	01/04/23 09:10	01/04/23
L2300373-22	TG02-MW-18-15.5-16.0	SOIL	Not Specified	01/04/23 10:15	01/04/23
L2300373-23	TG01-MW-02-6.5-7.0	SOIL	Not Specified	01/04/23 12:40	01/04/23
L2300373-24	TG01-MW-02-7.0-7.5	SOIL	Not Specified	01/04/23 12:55	01/04/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2300373-25	TB-230104-1	WATER	Not Specified	01/04/23 00:00	01/04/23

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

Case Narrative (continued)

Report Submission

January 13, 2023: This final report includes the results of all requested analyses.

January 10, 2023: This preliminary report includes the results of the Volatile Organics and Semivolatile Organics analyses performed on L2300373-22.

January 10, 2023: This preliminary report includes the results of the Volatile Organics and Semivolatile Organics analyses performed on L2300373-09, -16, -18, and -21 and the Total Metals analysis performed on L2300373-21.

January 06, 2023: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2300373-20: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (148%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

L2300373-21: The internal standard (IS) response for fluorobenzene (479%) and the surrogate recoveries for dibromofluoromethane (35%) and 4-bromofluorobenzene (675%) were outside the acceptance criteria due to obvious interferences. A copy of the chromatogram is included as an attachment to this report. Since the IS response was above method criteria, all associated compounds are considered to have a potentially low bias. A high-level analysis was performed, and those results are also reported. Differences were noted between the results of the Volatile Organics by EPA Method 5035/8260 High and Low Level analyses which have been attributed to sample non-homogeneity.

L2300373-21: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (169%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

Case Narrative (continued)

Semivolatile Organics

L2300373-15D, -16D, -17D, and -18D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2300373-16D and -18D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 01/13/23

ORGANICS

VOLATILES

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-01
Client ID: GPR794-09-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 08:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 13:42
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.098	0.0099	1
Benzene	1.0		mg/kg	0.024	0.0082	1
Toluene	0.42		mg/kg	0.049	0.027	1
Ethylbenzene	0.11		mg/kg	0.049	0.0069	1
p/m-Xylene	0.32		mg/kg	0.098	0.028	1
o-Xylene	ND		mg/kg	0.049	0.014	1
Xylenes, Total	0.32		mg/kg	0.049	0.014	1
Isopropylbenzene	17.	E	mg/kg	0.049	0.0054	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.098	0.0095	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.098	0.016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-01 D
Client ID: GPR794-09-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 08:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 01:19
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	18.		mg/kg	0.098	0.011	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	116		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-02
Client ID: GPR794-09-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 14:02
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.097	0.0098	1
Benzene	2.6		mg/kg	0.024	0.0081	1
Toluene	1.7		mg/kg	0.049	0.026	1
Ethylbenzene	0.32		mg/kg	0.049	0.0069	1
p/m-Xylene	1.0		mg/kg	0.097	0.027	1
o-Xylene	0.11		mg/kg	0.049	0.014	1
Xylenes, Total	1.1		mg/kg	0.049	0.014	1
Isopropylbenzene	20.	E	mg/kg	0.049	0.0053	1
1,3,5-Trimethylbenzene	0.016	J	mg/kg	0.097	0.0094	1
1,2,4-Trimethylbenzene	0.047	J	mg/kg	0.097	0.016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-02 D
Client ID: GPR794-09-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 01:47
Analyst: JIC
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	20.		mg/kg	0.12	0.013	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	114		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-03
Client ID: GPR794-09-2.0-2.5D
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 14:22
Analyst: NLK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.093	0.0094	1
Benzene	1.1		mg/kg	0.023	0.0077	1
Toluene	0.83		mg/kg	0.046	0.025	1
Ethylbenzene	0.21		mg/kg	0.046	0.0066	1
p/m-Xylene	0.72		mg/kg	0.093	0.026	1
o-Xylene	0.092		mg/kg	0.046	0.014	1
Xylenes, Total	0.81		mg/kg	0.046	0.014	1
Isopropylbenzene	14.	E	mg/kg	0.046	0.0051	1
1,3,5-Trimethylbenzene	0.017	J	mg/kg	0.093	0.0090	1
1,2,4-Trimethylbenzene	0.042	J	mg/kg	0.093	0.016	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-03 D
Client ID: GPR794-09-2.0-2.5D
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 02:14
Analyst: JIC
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	14.		mg/kg	0.093	0.010	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	117		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-05 D2
Client ID: GPR794-10-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 09:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 02:41
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	42.		mg/kg	0.47	0.051	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	117		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-05 D
Client ID: GPR794-10-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 09:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 14:41
Analyst: NLK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.19	0.019	2
Benzene	0.35		mg/kg	0.047	0.016	2
Toluene	0.27		mg/kg	0.094	0.051	2
Ethylbenzene	0.020	J	mg/kg	0.094	0.013	2
p/m-Xylene	0.076	J	mg/kg	0.19	0.052	2
o-Xylene	ND		mg/kg	0.094	0.027	2
Xylenes, Total	0.076	J	mg/kg	0.094	0.027	2
Isopropylbenzene	37.	E	mg/kg	0.094	0.010	2
1,3,5-Trimethylbenzene	ND		mg/kg	0.19	0.018	2
1,2,4-Trimethylbenzene	ND		mg/kg	0.19	0.031	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-07
Client ID: GPR790-08-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 10:20
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 12:24
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00021	1
Benzene	0.00076		mg/kg	0.00051	0.00017	1
Toluene	0.00074	J	mg/kg	0.0010	0.00056	1
Ethylbenzene	0.00019	J	mg/kg	0.0010	0.00014	1
p/m-Xylene	0.00068	J	mg/kg	0.0020	0.00057	1
o-Xylene	ND		mg/kg	0.0010	0.00030	1
Xylenes, Total	0.00068	J	mg/kg	0.0010	0.00030	1
Isopropylbenzene	0.0063		mg/kg	0.0010	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00020	1
1,2,4-Trimethylbenzene	0.00039	J	mg/kg	0.0020	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-08 D2 Date Collected: 01/03/23 11:00
Client ID: TG07-MW-04-1.5-2.0 Date Received: 01/04/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 09:59
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	440		mg/kg	3.0	1.0	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	106		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-08 D
Client ID: TG07-MW-04-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 11:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 15:01
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	2.4	0.24	20
Benzene	420	E	mg/kg	0.60	0.20	20
Toluene	ND		mg/kg	1.2	0.65	20
Ethylbenzene	ND		mg/kg	1.2	0.17	20
p/m-Xylene	ND		mg/kg	2.4	0.67	20
o-Xylene	ND		mg/kg	1.2	0.35	20
Xylenes, Total	ND		mg/kg	1.2	0.35	20
Isopropylbenzene	41.		mg/kg	1.2	0.13	20
1,3,5-Trimethylbenzene	ND		mg/kg	2.4	0.23	20
1,2,4-Trimethylbenzene	ND		mg/kg	2.4	0.40	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-09 D2 Date Collected: 01/03/23 11:10
Client ID: TG07-MW-04-2.0-2.5 Date Received: 01/04/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 20:37
Analyst: JIC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.72	0.072	5
Benzene	160	E	mg/kg	0.18	0.059	5
Toluene	0.28	J	mg/kg	0.36	0.19	5
Ethylbenzene	0.081	J	mg/kg	0.36	0.050	5
p/m-Xylene	ND		mg/kg	0.72	0.20	5
o-Xylene	0.17	J	mg/kg	0.36	0.10	5
Xylenes, Total	0.17	J	mg/kg	0.36	0.10	5
Isopropylbenzene	42.		mg/kg	0.36	0.039	5
1,3,5-Trimethylbenzene	0.24	J	mg/kg	0.72	0.069	5
1,2,4-Trimethylbenzene	0.51	J	mg/kg	0.72	0.12	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	104		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-09 D
Client ID: TG07-MW-04-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/08/23 20:26
Analyst: JIC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	170		mg/kg	0.72	0.24	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	92		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-10
Client ID: GPR799-08-1.0-1.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:30
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 12:44
Analyst: JIC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0019	0.00019	1
Benzene	0.20		mg/kg	0.00047	0.00016	1
Toluene	0.0048		mg/kg	0.00094	0.00051	1
Ethylbenzene	ND		mg/kg	0.00094	0.00013	1
p/m-Xylene	ND		mg/kg	0.0019	0.00052	1
o-Xylene	ND		mg/kg	0.00094	0.00027	1
Xylenes, Total	ND		mg/kg	0.00094	0.00027	1
Isopropylbenzene	0.0044		mg/kg	0.00094	0.00010	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0019	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0019	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-11 D2
Client ID: GPR799-08-3.0-3.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:40
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 03:08
Analyst: JIC
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	700		mg/kg	4.0	0.43	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	114		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-11 D
Client ID: GPR799-08-3.0-3.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:40
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 15:20
Analyst: NLK
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	1.6	0.16	10
Benzene	0.77		mg/kg	0.40	0.13	10
Toluene	ND		mg/kg	0.80	0.43	10
Ethylbenzene	0.13	J	mg/kg	0.80	0.11	10
p/m-Xylene	0.46	J	mg/kg	1.6	0.44	10
o-Xylene	ND		mg/kg	0.80	0.23	10
Xylenes, Total	0.46	J	mg/kg	0.80	0.23	10
Isopropylbenzene	460	E	mg/kg	0.80	0.087	10
1,3,5-Trimethylbenzene	ND		mg/kg	1.6	0.15	10
1,2,4-Trimethylbenzene	ND		mg/kg	1.6	0.26	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-12
Client ID: GPR791-09-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 12:05
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 13:03
Analyst: JIC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0016	0.00016	1
Benzene	0.0046		mg/kg	0.00041	0.00014	1
Toluene	0.0045		mg/kg	0.00081	0.00044	1
Ethylbenzene	0.00061	J	mg/kg	0.00081	0.00011	1
p/m-Xylene	0.0021		mg/kg	0.0016	0.00046	1
o-Xylene	0.00045	J	mg/kg	0.00081	0.00024	1
Xylenes, Total	0.0026	J	mg/kg	0.00081	0.00024	1
Isopropylbenzene	0.14		mg/kg	0.00081	0.00008	1
1,3,5-Trimethylbenzene	0.00028	J	mg/kg	0.0016	0.00016	1
1,2,4-Trimethylbenzene	0.00067	J	mg/kg	0.0016	0.00027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	127		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-13
Client ID: GPR791-09-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 12:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 13:23
Analyst: JIC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	0.0035		mg/kg	0.00049	0.00016	1
Toluene	0.00064	J	mg/kg	0.00099	0.00054	1
Ethylbenzene	ND		mg/kg	0.00099	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00055	1
o-Xylene	ND		mg/kg	0.00099	0.00029	1
Xylenes, Total	ND		mg/kg	0.00099	0.00029	1
Isopropylbenzene	0.0043		mg/kg	0.00099	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-15 D2 Date Collected: 01/03/23 12:45
Client ID: GPR793-03R-2.5-3.0 Date Received: 01/04/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 10:19
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	1500		mg/kg	50	5.4	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-15 D
Client ID: GPR793-03R-2.5-3.0
Sample Location: Not Specified

Date Collected: 01/03/23 12:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 03:35
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	10	1.0	100
Benzene	ND		mg/kg	2.5	0.83	100
Toluene	ND		mg/kg	5.0	2.7	100
Ethylbenzene	ND		mg/kg	5.0	0.70	100
p/m-Xylene	ND		mg/kg	10	2.8	100
o-Xylene	ND		mg/kg	5.0	1.4	100
Xylenes, Total	ND		mg/kg	5.0	1.4	100
Isopropylbenzene	2700	E	mg/kg	5.0	0.54	100
1,3,5-Trimethylbenzene	ND		mg/kg	10	0.96	100
1,2,4-Trimethylbenzene	ND		mg/kg	10	1.7	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	114		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-16 D2 Date Collected: 01/03/23 13:00
Client ID: GPR793-03R-3.0-3.5 Date Received: 01/04/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 21:32
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	2200		mg/kg	22	2.4	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	109		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-16 D
Client ID: GPR793-03R-3.0-3.5
Sample Location: Not Specified

Date Collected: 01/03/23 13:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/08/23 20:52
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	11	1.1	100
Benzene	ND		mg/kg	2.8	0.93	100
Toluene	ND		mg/kg	5.6	3.0	100
Ethylbenzene	ND		mg/kg	5.6	0.79	100
p/m-Xylene	ND		mg/kg	11	3.1	100
o-Xylene	ND		mg/kg	5.6	1.6	100
Xylenes, Total	ND		mg/kg	5.6	1.6	100
Isopropylbenzene	2300	E	mg/kg	5.6	0.61	100
1,3,5-Trimethylbenzene	ND		mg/kg	11	1.1	100
1,2,4-Trimethylbenzene	ND		mg/kg	11	1.9	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	93		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-17 D2
Client ID: GPR792-03R-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 13:20
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 04:02
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.56	0.056	5
Benzene	0.32		mg/kg	0.14	0.047	5
Toluene	ND		mg/kg	0.28	0.15	5
Ethylbenzene	0.060	J	mg/kg	0.28	0.040	5
p/m-Xylene	ND		mg/kg	0.56	0.16	5
o-Xylene	ND		mg/kg	0.28	0.082	5
Xylenes, Total	ND		mg/kg	0.28	0.082	5
Isopropylbenzene	200	E	mg/kg	0.28	0.031	5
1,3,5-Trimethylbenzene	0.067	J	mg/kg	0.56	0.054	5
1,2,4-Trimethylbenzene	0.12	J	mg/kg	0.56	0.094	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-17 D
Client ID: GPR792-03R-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 13:20
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/05/23 15:59
Analyst: NLK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	160		mg/kg	0.56	0.061	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-18 D2 Date Collected: 01/03/23 13:30
Client ID: GPR792-03R-2.0-2.5 Date Received: 01/04/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 21:59
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.50	0.050	5
Benzene	0.46		mg/kg	0.12	0.041	5
Toluene	ND		mg/kg	0.25	0.14	5
Ethylbenzene	0.052	J	mg/kg	0.25	0.035	5
p/m-Xylene	ND		mg/kg	0.50	0.14	5
o-Xylene	ND		mg/kg	0.25	0.073	5
Xylenes, Total	ND		mg/kg	0.25	0.073	5
Isopropylbenzene	190	E	mg/kg	0.25	0.027	5
1,3,5-Trimethylbenzene	0.074	J	mg/kg	0.50	0.048	5
1,2,4-Trimethylbenzene	0.14	J	mg/kg	0.50	0.083	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	106		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-18 D
Client ID: GPR792-03R-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 13:30
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/08/23 21:18
Analyst: JIC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	160		mg/kg	1.0	0.11	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	92		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-19
Client ID: GPR1117-03R-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 14:40
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 09:20
Analyst: JIC
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020	1
Benzene	0.00032	J	mg/kg	0.00050	0.00016	1
Toluene	ND		mg/kg	0.00099	0.00054	1
Ethylbenzene	ND		mg/kg	0.00099	0.00014	1
p/m-Xylene	ND		mg/kg	0.0020	0.00055	1
o-Xylene	ND		mg/kg	0.00099	0.00029	1
Xylenes, Total	ND		mg/kg	0.00099	0.00029	1
Isopropylbenzene	0.11		mg/kg	0.00099	0.00011	1
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-20
Client ID: PB-847-15R-6.0-6.5
Sample Location: Not Specified

Date Collected: 01/04/23 09:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 09:40
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.13	0.013	1
Benzene	ND		mg/kg	0.032	0.011	1
Ethylbenzene	5.4		mg/kg	0.064	0.0090	1
p/m-Xylene	2.3		mg/kg	0.13	0.036	1
o-Xylene	0.23		mg/kg	0.064	0.019	1
Xylenes, Total	2.5		mg/kg	0.064	0.019	1
Isopropylbenzene	3.2		mg/kg	0.064	0.0070	1
1,3,5-Trimethylbenzene	3.2		mg/kg	0.13	0.012	1
1,2,4-Trimethylbenzene	5.1		mg/kg	0.13	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	**148**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-21
Client ID: PB-847-15R-17.0-17.5
Sample Location: Not Specified

Date Collected: 01/04/23 09:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 21:05
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.10	0.010	1
Benzene	0.16		mg/kg	0.026	0.0085	1
Ethylbenzene	0.018	J	mg/kg	0.051	0.0073	1
p/m-Xylene	ND		mg/kg	0.10	0.029	1
o-Xylene	ND		mg/kg	0.051	0.015	1
Xylenes, Total	ND		mg/kg	0.051	0.015	1
Isopropylbenzene	1.1		mg/kg	0.051	0.0056	1
1,3,5-Trimethylbenzene	0.016	J	mg/kg	0.10	0.0099	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	**169**	Q	70-130
Dibromofluoromethane	85		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-21
Client ID: PB-847-15R-17.0-17.5
Sample Location: Not Specified

Date Collected: 01/04/23 09:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/09/23 22:53
Analyst: JIC
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methyl tert butyl ether	ND		mg/kg	0.0018	0.00019	1
Benzene	0.0076		mg/kg	0.00046	0.00015	1
Ethylbenzene	0.0024		mg/kg	0.00093	0.00013	1
p/m-Xylene	0.00070	J	mg/kg	0.0018	0.00052	1
o-Xylene	0.0014		mg/kg	0.00093	0.00027	1
Xylenes, Total	0.0021	J	mg/kg	0.00093	0.00027	1
Isopropylbenzene	0.11		mg/kg	0.00093	0.00010	1
1,3,5-Trimethylbenzene	0.0011	J	mg/kg	0.0018	0.00018	1
1,2,4-Trimethylbenzene	ND		mg/kg	0.0018	0.00031	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	117		70-130
4-Bromofluorobenzene	**675**	Q	70-130
Dibromofluoromethane	**35**	Q	70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-22
Client ID: TG02-MW-18-15.5-16.0
Sample Location: Not Specified

Date Collected: 01/04/23 10:15
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 01/06/23 15:32
Analyst: LAC
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Benzene	0.034	J	mg/kg	0.037	0.012	1
Toluene	0.30		mg/kg	0.074	0.040	1
1,2-Dibromoethane	ND		mg/kg	0.037	0.022	1
Ethylbenzene	3.4		mg/kg	0.074	0.010	1
p/m-Xylene	14.		mg/kg	0.15	0.041	1
o-Xylene	5.3		mg/kg	0.074	0.022	1
Xylenes, Total	19.		mg/kg	0.074	0.022	1
Isopropylbenzene	0.42		mg/kg	0.074	0.0081	1
1,3,5-Trimethylbenzene	3.8		mg/kg	0.15	0.014	1
1,2,4-Trimethylbenzene	11.		mg/kg	0.15	0.025	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-25
Client ID: TB-230104-1
Sample Location: Not Specified

Date Collected: 01/04/23 00:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 01/05/23 10:09
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Toluene	ND		ug/l	0.75	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/05/23 09:19
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07,10,12-13 Batch: WG1730307-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/05/23 09:19
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-03,05,08,11,17 Batch: WG1730426-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/05/23 09:43
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 25 Batch: WG1730461-5					
Methyl tert butyl ether	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
Toluene	ND		ug/l	0.75	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
Ethylbenzene	ND		ug/l	0.50	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
Isopropylbenzene	ND		ug/l	0.50	0.19
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/05/23 18:31
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-03,05,11,15,17 Batch: WG1730645-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	115		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/23 08:35
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 19 Batch: WG1730716-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Toluene	ND		mg/kg	0.0010	0.00054
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/06/23 08:35
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 08,15,20,22 Batch: WG1730717-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
1,2-Dibromoethane	ND		mg/kg	0.025	0.015
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/08/23 14:47
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09,16,18 Batch: WG1731730-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	90		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 14:43
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 21 Batch: WG1731733-5					
Methyl tert butyl ether	ND		mg/kg	0.0020	0.00020
Benzene	ND		mg/kg	0.00050	0.00017
Ethylbenzene	ND		mg/kg	0.0010	0.00014
p/m-Xylene	ND		mg/kg	0.0020	0.00056
o-Xylene	ND		mg/kg	0.0010	0.00029
Xylenes, Total	ND		mg/kg	0.0010	0.00029
Isopropylbenzene	ND		mg/kg	0.0010	0.00011
1,3,5-Trimethylbenzene	ND		mg/kg	0.0020	0.00019
1,2,4-Trimethylbenzene	ND		mg/kg	0.0020	0.00033

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	116		70-130

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 01/09/23 14:43
Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 09,16,18,21 Batch: WG1731736-5					
Methyl tert butyl ether	ND		mg/kg	0.10	0.010
Benzene	ND		mg/kg	0.025	0.0083
Toluene	ND		mg/kg	0.050	0.027
Ethylbenzene	ND		mg/kg	0.050	0.0070
p/m-Xylene	ND		mg/kg	0.10	0.028
o-Xylene	ND		mg/kg	0.050	0.014
Xylenes, Total	ND		mg/kg	0.050	0.014
Isopropylbenzene	ND		mg/kg	0.050	0.0054
1,3,5-Trimethylbenzene	ND		mg/kg	0.10	0.0096
1,2,4-Trimethylbenzene	ND		mg/kg	0.10	0.017

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	116		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,10,12-13 Batch: WG1730307-3 WG1730307-4								
Methyl tert butyl ether	107		107		66-130	0		30
Benzene	108		110		70-130	2		30
Toluene	104		108		70-130	4		30
Ethylbenzene	107		110		70-130	3		30
p/m-Xylene	108		112		70-130	4		30
o-Xylene	108		112		70-130	4		30
Isopropylbenzene	106		108		70-130	2		30
1,3,5-Trimethylbenzene	108		109		70-130	1		30
1,2,4-Trimethylbenzene	107		108		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	100		97		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03,05,08,11,17 Batch: WG1730426-3 WG1730426-4								
Methyl tert butyl ether	107		107		66-130	0		30
Benzene	108		110		70-130	2		30
Toluene	104		108		70-130	4		30
Ethylbenzene	107		110		70-130	3		30
p/m-Xylene	108		112		70-130	4		30
o-Xylene	108		112		70-130	4		30
Isopropylbenzene	106		108		70-130	2		30
1,3,5-Trimethylbenzene	108		109		70-130	1		30
1,2,4-Trimethylbenzene	107		108		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	100		97		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 25 Batch: WG1730461-3 WG1730461-4								
Methyl tert butyl ether	97		95		63-130	2		20
Benzene	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
Toluene	110		100		70-130	10		20
1,2-Dibromoethane	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	105		105		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	98		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03,05,11,15,17 Batch: WG1730645-3 WG1730645-4								
Methyl tert butyl ether	101		101		66-130	0		30
Benzene	111		111		70-130	0		30
Toluene	102		101		70-130	1		30
Ethylbenzene	105		104		70-130	1		30
p/m-Xylene	110		109		70-130	1		30
o-Xylene	105		106		70-130	1		30
Isopropylbenzene	100		102		70-130	2		30
1,3,5-Trimethylbenzene	100		102		70-130	2		30
1,2,4-Trimethylbenzene	100		102		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	82		85		70-130
Dibromofluoromethane	113		114		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 19 Batch: WG1730716-3 WG1730716-4								
Methyl tert butyl ether	85		92		66-130	8		30
Benzene	86		91		70-130	6		30
Toluene	84		90		70-130	7		30
Ethylbenzene	86		92		70-130	7		30
p/m-Xylene	88		94		70-130	7		30
o-Xylene	87		93		70-130	7		30
Isopropylbenzene	87		91		70-130	4		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	87		92		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	100		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 08,15,20,22 Batch: WG1730717-3 WG1730717-4								
Methyl tert butyl ether	85		92		66-130	8		30
Benzene	86		91		70-130	6		30
Toluene	84		90		70-130	7		30
1,2-Dibromoethane	86		93		70-130	8		30
Ethylbenzene	86		92		70-130	7		30
p/m-Xylene	88		94		70-130	7		30
o-Xylene	87		93		70-130	7		30
Isopropylbenzene	87		91		70-130	4		30
1,3,5-Trimethylbenzene	87		93		70-130	7		30
1,2,4-Trimethylbenzene	87		92		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	100		98		70-130
Dibromofluoromethane	98		99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09,16,18 Batch: WG1731730-3 WG1731730-4								
Methyl tert butyl ether	100		101		66-130	1		30
Benzene	106		107		70-130	1		30
Toluene	103		103		70-130	0		30
Ethylbenzene	107		107		70-130	0		30
p/m-Xylene	103		103		70-130	0		30
o-Xylene	100		100		70-130	0		30
Isopropylbenzene	112		112		70-130	0		30
1,3,5-Trimethylbenzene	110		110		70-130	0		30
1,2,4-Trimethylbenzene	108		108		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		106		70-130
Toluene-d8	108		108		70-130
4-Bromofluorobenzene	116		116		70-130
Dibromofluoromethane	91		91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 21 Batch: WG1731733-3 WG1731733-4								
Methyl tert butyl ether	92		94		66-130	2		30
Benzene	102		105		70-130	3		30
Ethylbenzene	96		98		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	99		101		70-130	2		30
Isopropylbenzene	93		95		70-130	2		30
1,3,5-Trimethylbenzene	95		96		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	95		94		70-130
4-Bromofluorobenzene	84		84		70-130
Dibromofluoromethane	109		110		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 09,16,18,21 Batch: WG1731736-3 WG1731736-4								
Methyl tert butyl ether	92		94		66-130	2		30
Benzene	102		105		70-130	3		30
Toluene	94		95		70-130	1		30
Ethylbenzene	96		98		70-130	2		30
p/m-Xylene	101		104		70-130	3		30
o-Xylene	99		101		70-130	2		30
Isopropylbenzene	93		95		70-130	2		30
1,3,5-Trimethylbenzene	95		96		70-130	1		30
1,2,4-Trimethylbenzene	95		96		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	84		84		70-130
Dibromofluoromethane	109		110		70-130

SEMIVOLATILES

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-01
Client ID: GPR794-09-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 08:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 13:01
Analyst: MG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.031	J	mg/kg	0.036	0.022	1
Benzo(a)pyrene	0.19		mg/kg	0.14	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	61		30-120
4-Terphenyl-d14	58		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-02
Client ID: GPR794-09-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 13:26
Analyst: MG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.27		mg/kg	0.036	0.022	1
Benzo(a)pyrene	0.087	J	mg/kg	0.14	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	69		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-03
Client ID: GPR794-09-2.0-2.5D
Sample Location: Not Specified

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 13:50
Analyst: MG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.20		mg/kg	0.036	0.022	1
Benzo(a)pyrene	0.058	J	mg/kg	0.14	0.043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	65		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-05
Client ID: GPR794-10-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 09:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 14:14
Analyst: MG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.30		mg/kg	0.036	0.022	1
Benzo(a)pyrene	0.047	J	mg/kg	0.14	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	66		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-07
Client ID: GPR790-08-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 10:20
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 14:38
Analyst: MG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.036	J	mg/kg	0.040	0.024	1
Benzo(a)pyrene	0.47		mg/kg	0.16	0.049	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	42		30-120
4-Terphenyl-d14	42		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-08
Client ID: TG07-MW-04-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 11:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 15:02
Analyst: MG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.0		mg/kg	0.038	0.023	1
Benzo(a)pyrene	0.076	J	mg/kg	0.15	0.046	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	61		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-09
Client ID: TG07-MW-04-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/08/23 19:06
Analyst: CMM
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.23		mg/kg	0.043	0.026	1
Benzo(a)pyrene	ND		mg/kg	0.17	0.052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	37		23-120
2-Fluorobiphenyl	48		30-120
4-Terphenyl-d14	33		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-10
Client ID: GPR799-08-1.0-1.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:30
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 15:26
Analyst: MG
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.032	J	mg/kg	0.037	0.022	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	67		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-11
Client ID: GPR799-08-3.0-3.5
Sample Location: Not Specified

Date Collected: 01/03/23 11:40
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 15:50
Analyst: MG
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.6		mg/kg	0.042	0.026	1
Benzo(a)pyrene	0.83		mg/kg	0.17	0.052	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	66		30-120
4-Terphenyl-d14	60		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-12
Client ID: GPR791-09-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 12:05
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 16:14
Analyst: MG
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.12		mg/kg	0.036	0.022	1
Benzo(a)pyrene	0.51		mg/kg	0.14	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	60		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-13
Client ID: GPR791-09-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 12:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 16:38
Analyst: MG
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.037	0.022	1
Benzo(a)pyrene	ND		mg/kg	0.15	0.045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	61		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-15 D
Client ID: GPR793-03R-2.5-3.0
Sample Location: Not Specified

Date Collected: 01/03/23 12:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/06/23 01:54
Analyst: CMM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.18	0.11	5
Benzo(a)pyrene	ND		mg/kg	0.72	0.22	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	79		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-16 D
Client ID: GPR793-03R-3.0-3.5
Sample Location: Not Specified

Date Collected: 01/03/23 13:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/10/23 06:07
Analyst: SLR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.73	0.45	20
Benzo(a)pyrene	ND		mg/kg	2.9	0.89	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-17 D
Client ID: GPR792-03R-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 13:20
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/06/23 03:31
Analyst: CMM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.19	0.11	5
Benzo(a)pyrene	ND		mg/kg	0.75	0.23	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	49		30-120
4-Terphenyl-d14	62		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-18 D
Client ID: GPR792-03R-2.0-2.5
Sample Location: Not Specified

Date Collected: 01/03/23 13:30
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/10/23 06:31
Analyst: SLR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	ND		mg/kg	0.71	0.44	20
Benzo(a)pyrene	ND		mg/kg	2.8	0.87	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
4-Terphenyl-d14	**0**	Q	18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-19
Client ID: GPR1117-03R-0.0-0.5
Sample Location: Not Specified

Date Collected: 01/03/23 14:40
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 17:50
Analyst: MG
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	0.46		mg/kg	0.039	0.024	1
Benzo(a)pyrene	0.76		mg/kg	0.16	0.048	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	67		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-20
Client ID: PB-847-15R-6.0-6.5
Sample Location: Not Specified

Date Collected: 01/04/23 09:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 18:14
Analyst: MG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	7.5		mg/kg	0.040	0.024	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	63		30-120
4-Terphenyl-d14	56		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-21
Client ID: PB-847-15R-17.0-17.5
Sample Location: Not Specified

Date Collected: 01/04/23 09:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/08/23 20:17
Analyst: CMM
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 01/07/23 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.6		mg/kg	0.038	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	44		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	50		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-22
Client ID: TG02-MW-18-15.5-16.0
Sample Location: Not Specified

Date Collected: 01/04/23 10:15
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 01/05/23 18:38
Analyst: JG
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 01/05/23 06:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Naphthalene	1.4		mg/kg	0.045	0.027	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	59		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 01/04/23 22:58
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 01/04/23 17:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,05,07-08,10-13,15,17,19-20,22 Batch: WG1730021-1					
Naphthalene	ND		mg/kg	0.033	0.020
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	76		10-136
4-Terphenyl-d14	90		18-120

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 01/06/23 22:06
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 01/06/23 13:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09,16,18,21 Batch: WG1730747-1					
Naphthalene	ND		mg/kg	0.033	0.020
Benzo(a)pyrene	ND		mg/kg	0.13	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	58		30-120
4-Terphenyl-d14	67		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05,07-08,10-13,15,17,19-20,22 Batch: WG1730021-2 WG1730021-3								
Naphthalene	66		66		40-140	0		50
Benzo(a)pyrene	77		78		40-140	1		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	67		67		25-120
Phenol-d6	66		65		10-120
Nitrobenzene-d5	58		58		23-120
2-Fluorobiphenyl	70		68		30-120
2,4,6-Tribromophenol	70		68		10-136
4-Terphenyl-d14	76		76		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09,16,18,21 Batch: WG1730747-2 WG1730747-3								
Naphthalene	57		57		40-140	0		50
Benzo(a)pyrene	57		56		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	69		68		23-120
2-Fluorobiphenyl	58		59		30-120
4-Terphenyl-d14	65		64		18-120

METALS

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-20
Client ID: PB-847-15R-6.0-6.5
Sample Location: Not Specified
Date Collected: 01/04/23 09:00
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	6.75		mg/kg	2.37	0.127	1	01/05/23 07:30	01/05/23 11:04	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-21
Client ID: PB-847-15R-17.0-17.5
Sample Location: Not Specified
Date Collected: 01/04/23 09:10
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5.90		mg/kg	2.26	0.121	1	01/09/23 22:00	01/10/23 08:24	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILADELPHIA REFINERY
Lab Number: L2300373
Project Number: P044.001.002
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-22
Client ID: TG02-MW-18-15.5-16.0
Sample Location: Not Specified
Date Collected: 01/04/23 10:15
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	83.5		mg/kg	2.63	0.141	1	01/05/23 07:30	01/05/23 11:09	EPA 3050B	1,6010D	EGW

Project Name: FORMER PHILADELPHIA REFINERY **Lab Number:** L2300373

Project Number: P044.001.002 **Report Date:** 01/13/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 20,22 Batch: WG1730143-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/05/23 07:30	01/05/23 10:32	1,6010D	EGW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21 Batch: WG1731076-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	01/09/23 22:00	01/10/23 08:02	1,6010D	EGW

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 20,22 Batch: WG1730143-2 SRM Lot Number: D116-540								
Lead, Total	104		-		83-117	-		
Total Metals - Mansfield Lab Associated sample(s): 21 Batch: WG1731076-2 SRM Lot Number: D116-540								
Lead, Total	101		-		83-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 20,22 QC Batch ID: WG1730143-3 QC Sample: L2300289-01 Client ID: MS Sample												
Lead, Total	26.7	47.8	63.5	77		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG1731076-3 QC Sample: L2300989-03 Client ID: MS Sample												
Lead, Total	12.6	45.2	56.6	97		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 20,22 QC Batch ID: WG1730143-4 QC Sample: L2300289-01 Client ID: DUP Sample						
Lead, Total	26.7	24.3	mg/kg	9		20
Total Metals - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG1731076-4 QC Sample: L2300989-03 Client ID: DUP Sample						
Lead, Total	12.6	10.6	mg/kg	17		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-01
Client ID: GPR794-09-1.5-2.0
Sample Location: Not Specified

Date Collected: 01/03/23 08:45
Date Received: 01/04/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.4		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-02
Client ID: GPR794-09-2.0-2.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.2		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-03
Client ID: GPR794-09-2.0-2.5D
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 08:55
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.0		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-05
Client ID: GPR794-10-1.5-2.0
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 09:45
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.7		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-07
Client ID: GPR790-08-0.0-0.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 10:20
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.3		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-08
Client ID: TG07-MW-04-1.5-2.0
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 11:00
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.2		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-09
Client ID: TG07-MW-04-2.0-2.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 11:10
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.8		%	0.100	NA	1	-	01/06/23 17:00	121,2540G	MF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-10
Client ID: GPR799-08-1.0-1.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 11:30
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.4		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-11
Client ID: GPR799-08-3.0-3.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 11:40
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.2		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-12
Client ID: GPR791-09-0.0-0.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 12:05
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.6		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-13
Client ID: GPR791-09-2.0-2.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 12:10
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.0		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-15
Client ID: GPR793-03R-2.5-3.0
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 12:45
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-16
Client ID: GPR793-03R-3.0-3.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 13:00
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	01/06/23 17:00	121,2540G	MF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-17
Client ID: GPR792-03R-1.5-2.0
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 13:20
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-18
Client ID: GPR792-03R-2.0-2.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 13:30
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.1		%	0.100	NA	1	-	01/06/23 17:00	121,2540G	MF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-19
Client ID: GPR1117-03R-0.0-0.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/03/23 14:40
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-20
Client ID: PB-847-15R-6.0-6.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/04/23 09:00
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.7		%	0.100	NA	1	-	01/05/23 08:02	121,2540G	RI

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-21
Client ID: PB-847-15R-17.0-17.5
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/04/23 09:10
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	01/06/23 17:00	121,2540G	MF

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002
Lab Number: L2300373
Report Date: 01/13/23

SAMPLE RESULTS

Lab ID: L2300373-22
Client ID: TG02-MW-18-15.5-16.0
Sample Location: Not Specified
Sample Depth:
Matrix: Soil

Date Collected: 01/04/23 10:15
Date Received: 01/04/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.2		%	0.100	NA	1	-	01/05/23 08:16	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER PHILADELPHIA REFINERY

Project Number: P044.001.002

Lab Number: L2300373

Report Date: 01/13/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03,05,07-08,10-13,15,17,19-20 QC Batch ID: WG1730150-1 QC Sample: L2300262-01 Client ID: DUP Sample						
Solids, Total	91.4	92.1	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 22 QC Batch ID: WG1730152-1 QC Sample: L2300472-01 Client ID: DUP Sample						
Solids, Total	78.1	76.4	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 09,16,18,21 QC Batch ID: WG1730839-1 QC Sample: L2300373-09 Client ID: TG07-MW-04-2.0-2.5						
Solids, Total	76.8	78.0	%	2		20

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-01A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-01B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-01C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-01D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-01E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-01X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-01Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-01Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-02A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-02B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-02C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-02D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-02E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-02X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-02Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-02Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-03A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-03B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-03C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-03D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-03E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-03X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-03Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-03Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-04A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-04B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-04C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-04D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2300373-04E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2300373-04X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-04Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-04Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-05A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-05B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-05C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-05D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-05E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-05X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-05Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-05Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-06A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-06B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-06C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-06D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2300373-06E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2300373-06X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-06Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-06Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-07A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-07B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-07C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-07D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-07E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-07X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-07Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-07Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-08A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-08B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-08C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-08D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-08E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-08X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-08Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-08Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-09A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-09B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-09C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-09D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-09E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-09X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-09Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-09Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-10A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-10B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-10C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-10D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-10E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-10X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-10Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-10Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-11A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-11B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-11C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-11D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-11E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-11X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-11Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-11Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-12A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-12B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-12C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-12D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-12E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-12X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-12Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-12Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-13A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-13B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-13C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-13D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-13E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-13X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-13Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-13Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-14A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-14B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-14C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-14D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2300373-14E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2300373-14X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-14Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-14Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	HOLD-8260HLW(14)
L2300373-15A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-15B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-15C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-15D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-15E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-15X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-15Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-15Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-16A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-16B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-16C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-16D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-16E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-16X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-16Y	Vial Water preserved split	A	NA		5.2	Y	Absent	**06-JAN-23 13:16**	PA-8260HLW(14)
L2300373-16Z	Vial Water preserved split	A	NA		5.2	Y	Absent	**06-JAN-23 13:16**	PA-8260HLW(14)
L2300373-17A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-17B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-17C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-17D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-17E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-17X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-17Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-17Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-18A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-18B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-18C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-18D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-18E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-18X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-18Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-18Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-19A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-19B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-19C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-19D	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-19E	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-19X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-19Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-19Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-20A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-20B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-20C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-20D	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2300373-20E	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-20F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-20X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-20Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-20Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:03	PA-8260HLW(14)
L2300373-21A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300373-21B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-21C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300373-21D	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2300373-21E	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-21F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-21X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260H(14),PA-8260HLW(14)
L2300373-21Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	PA-8260H(14),PA-8260HLW(14)
L2300373-21Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	PA-8260H(14),PA-8260HLW(14)
L2300373-22A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-22B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-22C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-22D	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		PB-TI(180)
L2300373-22E	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		TS(7)
L2300373-22F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		PA-PAH(14)
L2300373-22X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		PA-8260HLW(14)
L2300373-22Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	PA-8260HLW(14)
L2300373-22Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	PA-8260HLW(14)
L2300373-23A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-23B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-23C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-23D	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		HOLD-METAL(180)
L2300373-23E	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2300373-23F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2300373-23X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-23Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	HOLD-8260HLW(14)
L2300373-23Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	HOLD-8260HLW(14)
L2300373-24A	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-24B	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-24C	5 gram Encore Sampler	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: FORMER PHILADELPHIA REFINERY
Project Number: P044.001.002

Lab Number: L2300373
Report Date: 01/13/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2300373-24D	Glass 60mL/2oz unpreserved	A	NA		5.2	Y	Absent		HOLD-METAL(180)
L2300373-24E	Plastic 2oz unpreserved for TS	A	NA		5.2	Y	Absent		HOLD-WETCHEM()
L2300373-24F	Glass 120ml/4oz unpreserved	A	NA		5.2	Y	Absent		HOLD-8270(14)
L2300373-24X	Vial MeOH preserved split	A	NA		5.2	Y	Absent		HOLD-8260HLW(14)
L2300373-24Y	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	HOLD-8260HLW(14)
L2300373-24Z	Vial Water preserved split	A	NA		5.2	Y	Absent	05-JAN-23 07:05	HOLD-8260HLW(14)
L2300373-25A	Vial HCl preserved	A	NA		5.2	Y	Absent		PA-8260(14)
L2300373-25B	Vial HCl preserved	A	NA		5.2	Y	Absent		PA-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	FORMER PHILADELPHIA REFINERY	**Lab Number:**	L2300373
Project Number:	P044.001.002	**Report Date:**	01/13/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE____ OF ____

Date Rec'd in Lab: 1/5/23

ALPHA Job #: L2300373

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 E Hector St
Conshohocken, Pa
Phone: 215-297-3502
Fax:
Email: nicki.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Phila Refinery
Project Location:
Project #: P0414.001.002
Project Manager:
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved) 48 hr
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD @ terraphase.com
EDD Format Equis

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260-Benzene, Cumene, Naphthalene, MTBE, 1,2,4-TMB, 1,3,5-TMB	8270-Benzo(a)anthracene, Naphthalene	8260-Benzene, Cumene, Naphthalene, MTBE, 1,2,4-TMB, 1,3,5-TMB, Xylenes, 1,2-DCA	8260-Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, 1,2,4-TMB, 1,3,5-TMB, Cumene	6020-Lead	SAMPLE HANDLING Filtration ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
00373-01	GPR794-09-1.5-2.0	1/3/23	845	SO	SMM	X		X				Rush/Analyze	
02	GPR794-09-2.0-2.5	1/3/23	855	SO	SMM	X		X				Rush/Analyze	
03	GPR794-09-2.0-2.5D	1/3/23	855	SO	SMM	X		X				Rush/Analyze	
04	GPR794-09-3.0-3.5	1/3/23	905	SO	SMM	H		H				Rush/Hold	
05	GPR794-10-1.5-2.0	1/3/23	945	SO	SMM	X		X				Rush/Analyze	
06	GPR794-10-2.0-2.5	1/3/23	950	SO	SMM	H		H				Rush/Hold	
07	GPR790-08-0.0-0.5	1/3/23	1020	SO	SMM	X		X				Rush/Analyze	
08	TGGT-MW-04-1.5-2.0	1/3/23	1100	SO	SMM	X		X				Rush/Analyze	
09	TGGT-MW-04-2.0-2.5	1/3/23	1110	SO	SMM	H		H				Rush/Hold	
10	GPR799-08-1.0-1.5	1/3/23	1130	SO	SMM	X		X				Rush/Analyze	
					Container Type								
					Preservative								

Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1510		1/4/23 1510
	1/4/23 1800		1/4/23 1800
	1/4/23 2300		1.4.23 2100

SOIL/GW 1/5/23 0120

1/5/22 0120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

CHAIN OF CUSTODY

PAGE _____ OF _____

Date Rec'd in Lab: 1/5/23

ALPHA Job #: L2300373

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 E Hector St, Ste 416
Conshohocken, Pa 19428
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Philadelphia Refinery AST Closure
Project Location:
Project #: P044.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☒ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 48hr Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
EDD Format Equis

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 8260-Benzene,Ethylbenzene,Methyl tert-butyl ether,Naphthalene,Toluene,Total Xylenes,1,3,5-TMB,1,2,4-TMB	8270-Benzo(a)anthracene,Benzo(b)fluoranthene,Benzo(k)fluoranthene,Chrysene,Naphthalene	TCLP	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
00373-11	GPR799-08-5.0-5.5	1/3/23	1140	SO	SMM	X	X			Rush/Analyze	
12	GPR791-09-0.0-0.5	1/3/23	1205	SO	SMM	X	X			Rush/Analyze	
13	GPR791-09-2.0-2.5	1/3/23	1210	SO	SMM	X	X			Rush/Analyze	
14	GPR791-09-2.5-3.0	1/3/23	1215	SO	SMM	H	H			Rush/Hold	
15	GPR793-03R-2.5-3.0	1/3/23	1245	SO	SMM	X	X			Rush/Analyze	
16	GPR793-03R-3.0-3.5	1/3/23	1300	SO	SMM	H	H			Rush/Hold	
17	GPR792-03R-1.5-2.0	1/3/23	1320	SO	SMM	X	X			Rush/Analyze	
18	GPR792-03R-2.0-2.5	1/3/23	1330	SO	SMM	H	H			Rush/Hold	
19	GPR1117-03R-0.0-0.5	1/3/23	1440	SO	SMM	X	X			Rush/Analyze	
20	PB-847-15R-6.0-6.5	1/04/23	900	SO	SMM	X	X	X		Rush/Analyze	

Container Type																	
Preservative																	

Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1570	STL ADL	1/4/23 15:10
STL	1/4/23 1800		1/4/22 1800
ADL	1/4/23 2100		1-4-23 2400

1/5/22 0120

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CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 1/5/23

ALPHA Job #: L2300373

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Terraphase Engineering
Address: 1100 C Hector St
Conshohocken, Pa. 19428
Phone: 215-297-3502
Fax:
Email: nick.scala@terraphase.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Phila Refinery AST
Project Location: Bucks
Project #: P0414.001.002
Project Manager: Nick Scala
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved) 48hr
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:
EDD@terraphase.com
EDD Forms

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 - Benzene, Ethylbenzene, Methylene chloride, MTBE, Toluene, Xylenes	8270 - Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene	8260 - Benzene, Ethylbenzene, Toluene, Xylenes, MTBE, 1,3,5-TMB, 1,2,4-TMB	8270 - Naphthalene	8260 - Benzene, Ethylbenzene, Toluene, Xylenes, MTBE, 1,3,5-TMB, 1,2,4-TMB	8270 - Naphthalene	6020 - Lead	Sample Specific Comments	TOTAL # BOTTLES
00373-21	PB-847-15R-17.0-17.5	1/4/23	910	SO	SMM		H	H				H	Rush/Hold	
22	T602-MW-18-15.5-16.0	1/4/23	1015	SO	SMM				X	X		X	Standard TAT/Analyze	
23	T601-MW-02-6.5-7.0	1/4/23	1240	SO	SMM	H					H	H	Standard TAT/Hold	
24	T601-MW-02-7.0-7.5	1/4/23	1255	SO	SMM	H					H	H	Standard TAT/Hold	
25	TB-230104-1	1/4/23	1458	TO	SMM	X							Analyze for Full 8260 VOCs	

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Container Type														
Preservative														

Relinquished By:	Date/Time	Received By:	Date/Time
	1/4/23 1570	STm AAL	1/4/23 15:10
	1/4/23 1800		1/4/23 1800
	1/4/23 2100		1-4-23 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

1/5/23 0120

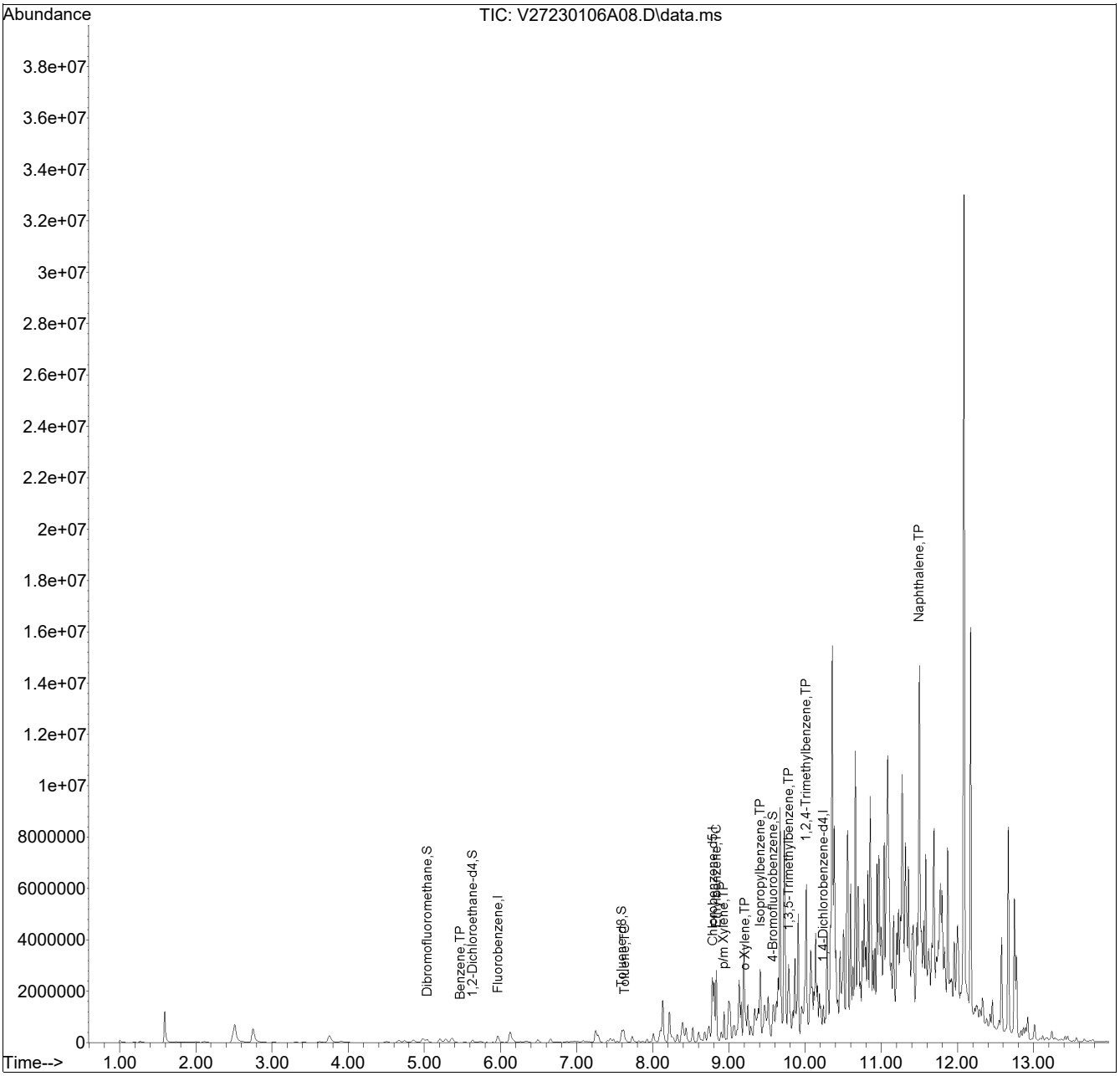
1/5/22 0120

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA127\2023\230106A\
Data File : V27230106A08.D
Acq On : 06 Jan 2023 09:40 am
Operator : VOA127:JIC
Sample : L2300373-20,31H,5.78,5,0.100,,X,R3B
Misc : WG1730717,ICAL19627
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 06 10:20:59 2023
Quant Method : I:\VOLATILES\VOA127\2023\230106A\V127_221227N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed Dec 28 14:42:32 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list06A\V27230106A01.D•

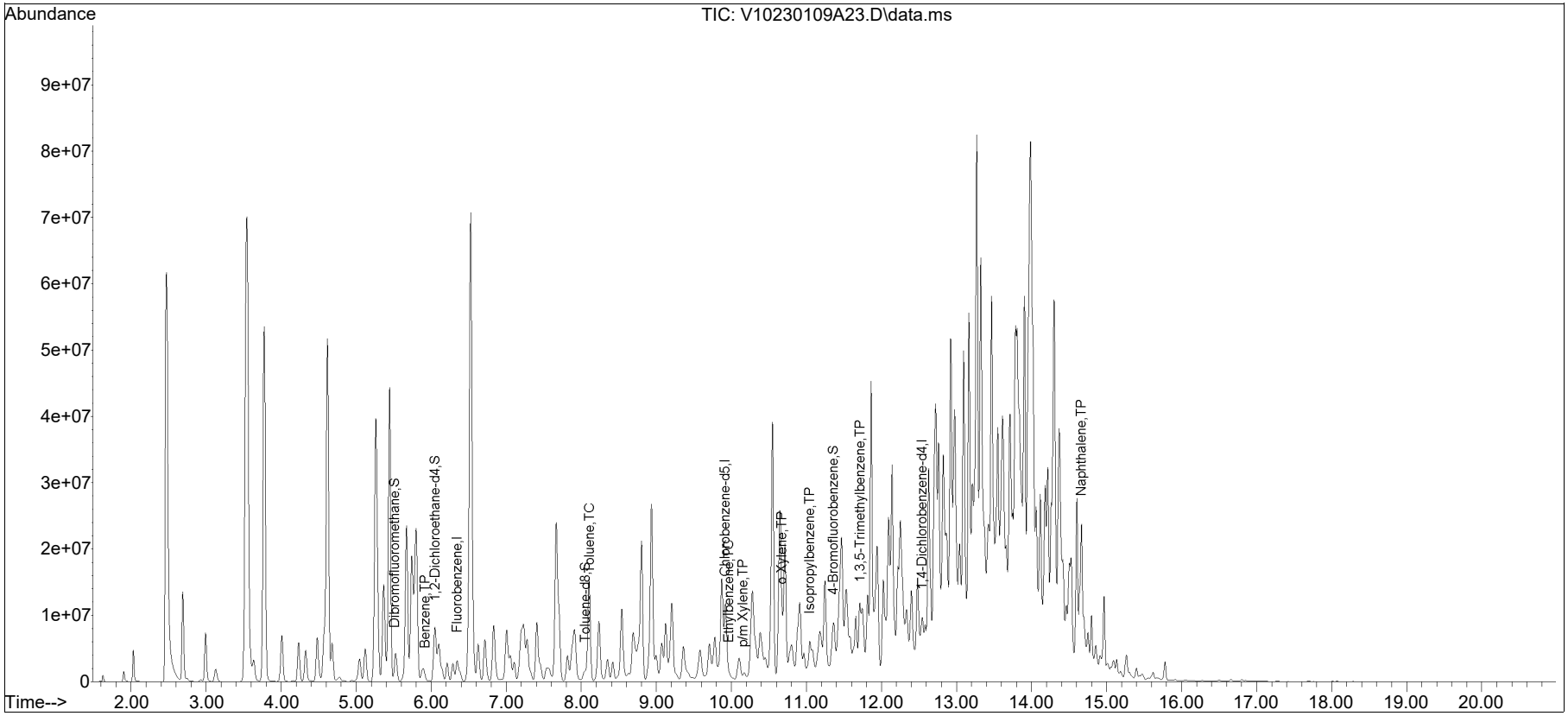


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2023\230109A\
Data File : V10230109A23.D
Acq On : 9 Jan 2023 10:53 pm
Operator : VOA110:JIC
Sample : l2300373-21,31,6.22,5,,z,r3b
Misc : WG1731733,ICAL19281
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jan 10 08:29:30 2023
Quant Method : I:\VOLATILES\VOA110\2023\230109A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list09A\V10230109A02.D•



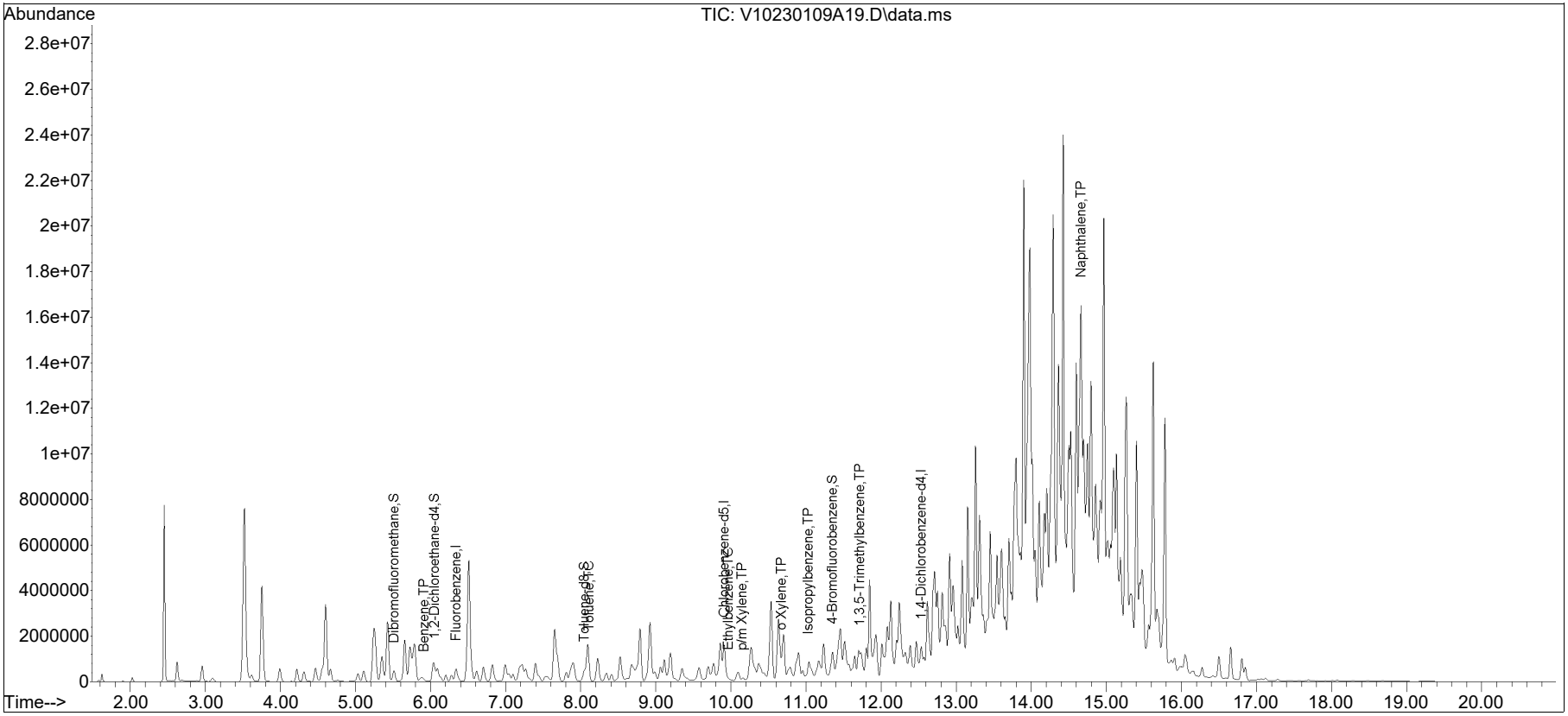
V110_220822N_8260.m Tue Jan 10 08:46:59 2023 Page: 2

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA110\2023\230109A\
Data File : V10230109A19.D
Acq On : 9 Jan 2023 9:05 pm
Operator : VOA110:JIC
Sample : l2300373-21,31h,6.58,5,0.100,,x,r3b
Misc : WG1731736,ICAL19281
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jan 10 08:27:54 2023
Quant Method : I:\VOLATILES\VOA110\2023\230109A\V110_220822N_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Aug 23 09:34:28 2022
Response via : Initial Calibration

Sub List : 8260-PA_ShortList - PA Short list09A\V10230109A02.D•



Appendix J

Release Notifications

January 19, 2023

Ms. Lisa Strobridge
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

sent via electronic mail: lstrobridge@pa.gov

Subject: **Philadelphia Energy Solutions Refining and Marketing, LLC**
PADEP Notification of Release Form – Tank Group 06
PADEP Facility ID #51-33624 – Girard Point Refinery
Incident No. 58434
Initial Notification
3144 W. Passyunk Avenue, Philadelphia, PA 19141

Dear Lisa:

Enclosed please find a copy of the Pennsylvania Department of Environmental Protection's (PADEP) Notification of Release Form for the Philadelphia Energy Solutions Refining and Marketing, LLC (PESRM) Girard Point Refinery. The PADEP was notified via telephone on January 4, 2023, that Aboveground Storage Tank (AST) Site Assessment sampling, performed in Tank Group 06, identified constituents in soil at concentrations greater than the applicable PADEP Medium Specific Concentrations (MSCs). Specifically, concentrations greater than applicable MSCs were identified at tank GPR-284 (004A), GPR-270 (021A), GPR-276 (023A), GPR-282 (026A), and GPR-285 (027A). This notification is the initial incident reported in Tank Group 06 (Incident #58434. Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 will be combined with the incident number #58434.

Please contact me at kevin.long@terraphase.com / 609-236-8171 x93 or Nick Scala at nick.scala@terraphase.com / 609-236-8171 x92 with any questions.

Sincerely,

for Terraphase Engineering Inc.

Kevin Long
Principal Consultant

Nicholas Scala, PG, LSRP
Principal Geologist

KL/NS:cs

Enclosure: PADEP Notification of Release Form (Tank Group 06)

cc: Joseph Jeray (jjeray@hilcoglobal.com)
Stephanie Eggert (seggert@hilcoglobal.com)
Charles Barksdale (cbarksdale@hilcoglobal.com)
Bob Armstrong (rarmstrong@NorthStar.com)
PADEP – (ra-serotanks@pa.gov)
Ralph DiPietro (Philadelphia L & I – ralph.dipietro@phila.gov)

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	North-central Region	Northeast Region
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Girard Point
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne R. Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne R. Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Vacuum Gas Oil, Recovered Oil, Light Naphtha	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 1 (m) / 4 (d) / 2023 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 1 (m) / 4 (d) / 2023 (y) Office Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 1 (m) / 19 (d) / 2023 (y) Municipality Philadelphia
Date: ___ (m) / ___ (d) / ___ (y) Municipality ___

Source (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 004A, 021A, 023A, 026A, 027A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☒	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Prevention Equipment	☐	Visible Product or Odor Reports	☐	Water Supplies	☐
Submersible Turbine Pump Head/Fittings	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Other (Specify)	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Unknown	☐				

Cause (Mark All That Apply ☒):		
Faulty Installation ☐ Corrosion ☐ Physical/Mechanical Failure ☐ Spill During Delivery ☐ Overfill at Delivery ☐ Vehicle Gas Tank Overfill ☐ Product Delivery Hose Rupture ☐ Accident/Natural Disaster ☐ Other (Specify) _____ ☐ Unknown ☐	Supply Well Sample Results ☐ Monitoring Well Sample Results ☐ Property Transfer ☐ Other (Specify) Site Assessment Sampling ☒ Unknown ☐	

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☐
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 1 (m) / 4 (d) / 2023 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 1 (m) / 4 (d) / 2023 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 06 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs). The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: benzene, 1,3,5-trimethylbenzene, benzo(a)pyrene, and lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

This notification is the initial incident reported in Tank Group 06. Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 will be combined with the incident number, once assigned.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

01 / 19 / 2023
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☐ **Initial**
☒ **Follow-Up**

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	**North-central Region**	**Northeast Region**
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Girard Point
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne R. Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne R. Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Heavy Gas Oil	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 1 (m) / 12 (d) / 2023 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 1 (m) / 12 (d) / 2023 (y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 1 (m) / 24 (d) / 2023 (y) Municipality: Philadelphia
Date: ____ (m) / ____ (d) / ____ (y) Municipality: ____

Source (Mark All That Apply ☒):

- Tank (DEP Assigned Nos. 025A) ☒
- Piping System (Aboveground Regulated) ☒
- Piping System (Underground Regulated) ☐
- Piping System (Non-Regulated) ☐
- Dispenser/Dispensing Equipment ☐
- Spill Prevention Equipment ☐
- Submersible Turbine Pump Head/Fittings ☐
- Containment/Sump Failure ☐
- Other (Specify) Below AST concrete foundation ☒
- Unknown ☐

Cause (Mark All That Apply ☒):

- Faulty Installation ☐
- Corrosion ☐
- Physical/Mechanical Failure ☐
- Spill During Delivery ☐
- Overfill at Delivery ☐
- Vehicle Gas Tank Overfill ☐
- Product Delivery Hose Rupture ☐
- Accident/Natural Disaster ☐
- Other (Specify) ☐
- Unknown ☒

How Discovered (Mark All That Apply ☒):

- During Closure ☒
- Lining Installation ☐
- Routine Leak Detection ☐
- Third Party Inspection ☐
- Tightness Testing Activities ☐
- Visible Product or Odor Reports ☐
- Water in Tank ☐
- Construction ☐
- Upgrade/Repair ☐
- Supply Well Sample Results ☐
- Monitoring Well Sample Results ☐
- Property Transfer ☐
- Other (Specify) Partial removal of concrete foundation ☒
- Unknown ☐

Environmental Media Affected and Impacts (Mark All That Apply ☒):

- Soil ☒
- Sediment ☐
- Surface Water ☐
- Ground Water ☐
- Bedrock ☐
- Water Supplies ☐
- Vapors/Product in Buildings ☐
- Vapors/Product in Sewer/Utility Lines ☐
- Ecological Receptors ☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☒	☐	☐	☐
Free Product Recovered	☐	☒	☐	☐
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 1 (m) / 12 (d) / 2023 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Free product observed below AST concrete foundation

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 1 (m) / 12 (d) / 2023 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☒ Ponded Product
- ☒ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Free product observed below AST concrete foundation

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. In preparation for Site Assessment soil sampling, concrete foundations associated with certain tanks in Tank Group 06, were partially removed to allow access for sampling. This notification is provided to PADEP to report that free product was encountered beneath the concrete pad at tank GP R 281 (025A). Following initial discovery of the free product, the facility contractor has initiated interim measures to recover the observed free product and ponded water from beneath the tank foundation. The observed free product appears to be contained within the ring wall of the tank foundation. The volume of the release will be estimated once recovery efforts are complete.

Additional actions, including but not limited to Site Assessment sampling, site characterization sampling, and/or soil remediation (if necessary) will performed.

This notification is the second incident reported in Tank Group 06 (Incident #58434). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 will be combined with the incident number #58434.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

01 / 18 / 2023
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

terraphase engineering

July 31, 2023

Ms. Lisa Strobridge
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

sent via electronic mail: lstrobridge@pa.gov

Subject: **Philadelphia Energy Solutions Refining and Marketing LLC**
PADEP Notification of Release Form – Tank Group 06
PADEP Facility ID #51-33624 – Girard Point Refinery
Incident No. 58434
Initial Notification
3144 W. Passyunk Avenue, Philadelphia, PA 19141

Dear Lisa:

Enclosed please find a copy of the Pennsylvania Department of Environmental Protection's (PADEP) Notification of Release Form for the Philadelphia Energy Solutions Refining and Marketing LLC (PESRM) Girard Point Refinery. The PADEP was notified via telephone on July 18, 2023, that Aboveground Storage Tank (AST) Site Assessment sampling, performed in Tank Group 06, identified constituents in soil at concentrations greater than the applicable PADEP Medium Specific Concentrations (MSCs). Specifically, concentrations greater than applicable MSCs were identified at tank GPR-273 (003A) and GPR-1038 (050A). This notification is the third incident reported in Tank Group 06 (Incident #58434). Pursuant to discussions with our PADEP case team, a Tank Group 06 Site Characterization Addendum will be submitted to include these two tanks with the existing incident (#58434) and that the evaluation of subsurface conditions in Tank Group 06 will be completed in future reporting.

Please contact me at kevin.long@terraphase.com / 609-236-8171 x93 or Nick Scala at nick.scala@terraphase.com / 609-236-8171 x92 with any questions.

Sincerely,

for Terraphase Engineering Inc.

Kevin L. Long

Kevin Long
Principal Consultant

Nicholas J. Scala

Nicholas Scala, PG, LSRP
Principal Geologist

KL/NS:cs

Enclosure: PADEP Notification of Release Form (Tank Group 06)

cc: Joseph Jeray (jjeray@hilcoglobal.com)
Stephanie Eggert (seggert@hilcoglobal.com)
Charles Barksdale (cbarksdale@hilcoglobal.com)
Bob Armstrong (rarmstrong@NorthStar.com)
PADEP – (ra-serotanks@pa.gov)
Ralph DiPietro (Philadelphia L & I – ralph.dipietro@phila.gov)

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☐ **Initial**
☒ **Follow-Up**

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	**North-central Region**	**Northeast Region**
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Girard Point
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne R. Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne R. Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I	B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I
Leaded Gasoline ☐		☐ [S] ☐ [C]
Unleaded Gasoline ☐		☐ [S] ☐ [C]
Aviation Gasoline ☐		☐ [S] ☐ [C]
Kerosene ☐		☐ [S] ☐ [C]
Jet Fuel ☐		☐ [S] ☐ [C]
Diesel Fuel ☐		☐ [S] ☐ [C]
New Motor Oil ☐		☐ [S] ☐ [C]
Used Motor Oil ☐		☐ [S] ☐ [C]
Fuel Oil No. 1 ☐		☐ [S] ☐ [C]
Fuel Oil No. 2 ☐		☐ [S] ☐ [C]
Fuel Oil No. 4 ☐		☐ [S] ☐ [C]
Fuel Oil No. 5 ☐		☐ [S] ☐ [C]
Fuel Oil No. 6 ☐		☐ [S] ☐ [C]
Other (Specify) Vacuum Gas Oil, Alky Slurry ☒	U N, K N O, W N	☐ [S] ☒ [C]
Unknown ☐		☐ [S] ☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 7 (m) / 18 (d) / 2023 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 7 (m) / 18 (d) / 2023 (y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 7 (m) / 31 (d) / 2023 (y) Municipality: Philadelphia
Date: ___ (m) / ___ (d) / ___ (y) Municipality: ___

Source (Mark All That Apply ☒):	How Discovered (Mark All That Apply ☒):	Environmental Media Affected and Impacts (Mark All That Apply ☒):
Tank (DEP Assigned Nos. 003A, 050A) ☒	During Closure ☒	Soil ☒
Piping System (Aboveground Regulated) ☒	Lining Installation ☐	Sediment ☐
Piping System (Underground Regulated) ☐	Routine Leak Detection ☐	Surface Water ☐
Piping System (Non-Regulated) ☐	Third Party Inspection ☐	Ground Water ☐
Dispenser/Dispensing Equipment ☐	Tightness Testing Activities ☐	Bedrock ☐
Spill Prevention Equipment ☐	Visible Product or Odor Reports ☐	Water Supplies ☐
Submersible Turbine Pump Head/Fittings ☐	Water in Tank ☐	Vapors/Product in Buildings ☐
Containment/Sump Failure ☐	Construction ☐	Vapors/Product in Sewer/Utility Lines ☐
Other (Specify) ☐	Upgrade/Repair ☐	Ecological Receptors ☐
Unknown ☐	Supply Well Sample Results ☐	
Cause (Mark All That Apply ☒):	Monitoring Well Sample Results ☐	
Faulty Installation ☐	Property Transfer ☐	
Corrosion ☐	Other (Specify) Site Assessment Sampling ☒	
Physical/Mechanical Failure ☐	Unknown ☐	
Spill During Delivery ☐		
Overfill at Delivery ☐		
Vehicle Gas Tank Overfill ☐		
Product Delivery Hose Rupture ☐		
Accident/Natural Disaster ☐		
Other (Specify) ☐		
Unknown ☒		

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☒
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 7 (m) / 18 (d) / 2023 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 7 (m) / 18 (d) / 2023 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 06 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs). The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: naphthalene and lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

This notification is the third incident reported in Tank Group 06 (Incident #58434). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 will be combined with the incident number #58434.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Anne R. Garr, Assistant Secretary
Signature of Owner or Operator

07 / 28 / 2023
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

terraphase engineering

February 7, 2024

Ms. Chelsea Fazzino
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

sent via electronic mail: cfazzino@pa.gov

Subject: **Philadelphia Energy Solutions Refining and Marketing LLC**
PADEP Notification of Release Form – Tank Group 06
PADEP Facility ID #51-33624 – Girard Point Refinery
Incident No. 58434
4th Notification
3144 W. Passyunk Avenue, Philadelphia, PA 19141

Dear Chelsea:

Enclosed please find a copy of the Pennsylvania Department of Environmental Protection's (PADEP) Notification of Release Form for the Philadelphia Energy Solutions Refining and Marketing LLC (PESRM) Girard Point Refinery. The PADEP was notified via telephone on January 25, 2024, that Aboveground Storage Tank (AST) Site Assessment sampling, performed in Tank Group 06, identified constituents in soil at concentrations greater than the applicable PADEP Medium Specific Concentrations (MSCs). Specifically, concentrations greater than applicable MSCs were identified at tank GP R 1101 (047A). This notification is the fourth incident reported in Tank Group 06 (Incident #58434). Pursuant to discussions with our PADEP case team, a Tank Group 06 Site Characterization Addendum will be submitted to include this tank with the existing incident (#58434) and that the evaluation of subsurface conditions in Tank Group 06 will be completed in future reporting.

Please contact me at kevin.long@terraphase.com / 609-236-8171 x93 or Nick Scala at nick.scala@terraphase.com / 609-236-8171 x92 with any questions.

Sincerely,

for Terraphase Engineering Inc.

Kevin Long
Principal Consultant

Nicholas Scala, PG, LSRP
Principal Geologist

KL/NS:cs

Enclosure: PADEP Notification of Release Form (Tank Group 06)

cc: Amy Piccone (apiccone@hilcoglobal.com)
Stephanie Eggert (seggert@hilcoglobal.com)
Charles Barksdale (cbarksdale@hilcoglobal.com)
Bob Armstrong (rarmstrong@NorthStar.com)
PADEP – (ra-serotanks@pa.gov)
Ralph DiPietro (Philadelphia L & I – ralph.dipietro@phila.gov)

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☐ **Initial**
☒ **Follow-Up**

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	North-central Region	Northeast Region
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Girard Point
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne R. Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing, LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne R. Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Recovered Oil	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 1 (m) / 25 (d) / 2024 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 1 (m) / 25 (d) / 2024 (y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 2 (m) / 7 (d) / 2024 (y) Municipality: Philadelphia
Date: ____ (m) / ____ (d) / ____ (y) Municipality: ____

Source (Mark All That Apply ☒):

Tank (DEP Assigned Nos. 047A)	☒
Piping System (Aboveground Regulated)	☒
Piping System (Underground Regulated)	☐
Piping System (Non-Regulated)	☐
Dispenser/Dispensing Equipment	☐
Spill Prevention Equipment	☐
Submersible Turbine Pump Head/Fittings	☐
Containment/Sump Failure	☐
Other (Specify)	☐
Unknown	☐

Cause (Mark All That Apply ☒):

Faulty Installation	☐
Corrosion	☐
Physical/Mechanical Failure	☐
Spill During Delivery	☐
Overfill at Delivery	☐
Vehicle Gas Tank Overfill	☐
Product Delivery Hose Rupture	☐
Accident/Natural Disaster	☐
Other (Specify)	☐
Unknown	☒

How Discovered (Mark All That Apply ☒):

During Closure	☒
Lining Installation	☐
Routine Leak Detection	☐
Third Party Inspection	☐
Tightness Testing Activities	☐
Visible Product or Odor Reports	☐
Water in Tank	☐
Construction	☐
Upgrade/Repair	☐
Supply Well Sample Results	☐
Monitoring Well Sample Results	☐
Property Transfer	☐
Other (Specify) Site Assessment Sampling	☒
Unknown	☐

Environmental Media Affected and Impacts (Mark All That Apply ☒):

Soil	☒
Sediment	☐
Surface Water	☐
Ground Water	☐
Bedrock	☐
Water Supplies	☐
Vapors/Product in Buildings	☐
Vapors/Product in Sewer/Utility Lines	☐
Ecological Receptors	☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☒
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 1 (m) / 25 (d) / 2024 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 1 (m) / 25 (d) / 2024 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 06 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs). The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

This notification is the fourth incident reported in Tank Group 06 (Incident #58434). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 06 will be combined with the incident number #58434.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Philadelphia Energy Solutions Refining and Marketing LLC, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Anne R. Garr, Assistant Secretary
Signature of Owner or Operator

2 / 7 / 2024
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____
Signature of Certified Installer

/ /
Date

_____
Installer Certification Number

_____
Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____
Signature of Certified Inspector

/ /
Date

_____
Inspector Certification Number

_____
Company Certification Number

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	North-central Region	Northeast Region
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Point Breeze
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing, LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Benzene, UDEX Feed	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 08 (m) / 10 (d) / 2022 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 08 (m) / 10 (d) / 2022 (y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 08 (m) / 19 (d) / 2022 (y) Municipality: Philadelphia
Date: ____ (m) / ____ (d) / ____ (y) Municipality: ____

Source (Mark All That Apply ☒):

- Tank (DEP Assigned Nos. 005A,007A,030A,039A) ☒
- Piping System (Aboveground Regulated) ☒
- Piping System (Underground Regulated) ☐
- Piping System (Non-Regulated) ☐
- Dispenser/Dispensing Equipment ☐
- Spill Prevention Equipment ☐
- Submersible Turbine Pump Head/Fittings ☐
- Containment/Sump Failure ☐
- Other (Specify) ____ ☐
- Unknown ☐

Cause (Mark All That Apply ☒):

- Faulty Installation ☐
- Corrosion ☐
- Physical/Mechanical Failure ☐
- Spill During Delivery ☐
- Overfill at Delivery ☐
- Vehicle Gas Tank Overfill ☐
- Product Delivery Hose Rupture ☐
- Accident/Natural Disaster ☐
- Other (Specify) ____ ☐
- Unknown ☐

How Discovered (Mark All That Apply ☒):

- During Closure ☒
- Lining Installation ☐
- Routine Leak Detection ☐
- Third Party Inspection ☐
- Tightness Testing Activities ☐
- Visible Product or Odor Reports ☐
- Water in Tank ☐
- Construction ☐
- Upgrade/Repair ☐
- Supply Well Sample Results ☐
- Monitoring Well Sample Results ☐
- Property Transfer ☐
- Other (Specify) Site Assessment Sampling ☒
- Unknown ☐

Environmental Media Affected and Impacts (Mark All That Apply ☒):

- Soil ☒
- Sediment ☐
- Surface Water ☐
- Ground Water ☐
- Bedrock ☐
- Water Supplies ☐
- Vapors/Product in Buildings ☐
- Vapors/Product in Sewer/Utility Lines ☐
- Ecological Receptors ☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☐
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 08 (m) / 10 (d) / 2022 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 08 (m) / 10 (d) / 2022 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 07 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs). The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: benzene and lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

This notification is the initial incident reported in Tank Group 07 (Incident #57973). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 07 will be combined with the incident number #57973.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

08 / 17 / 2022
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number

terraphase engineering

September 1, 2022

Mr. Ron Estel
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Division of Storage Tanks
2 East Main Street
Norristown, PA 19401

sent via electronic mail

Subject: **Philadelphia Energy Solutions Refining and Marketing, LLC**
PADEP Notification of Release Form – Tank Group 07
PADEP Facility ID #51-33624 – Point Breeze Refinery
Incident No. 57973
Second Notification
3144 W. Passyunk Avenue, Philadelphia, PA 19141

Dear Mr. Estel:

Enclosed please find a copy of the Pennsylvania Department of Environmental Protection's (PADEP) Notification of Release Form for the Philadelphia Energy Solutions Refining and Marketing, LLC (PESRM) Point Breeze Refinery. The PADEP was notified via telephone on August 24, 2022, that Aboveground Storage Tank (AST) Site Assessment sampling, performed in Tank Group 07, identified constituents in soil at concentrations greater than the applicable PADEP Medium Specific Concentrations (MSCs). Specifically, concentrations greater than applicable MSCs were identified at tank GP R 494 (029A), GP R 767 (046A), GP R 791 (006A), GP R 792 (035A), GP R 793 (036A), and GP R 794 (037A). This notification is the second incident reported in Tank Group 07 (Incident #57973). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 07 will be combined with the incident number #57973.

Please contact me at kevin.long@terraphase.com / 609-236-8171 x93 or Nick Scala at nick.scala@terraphase.com / 609-236-8171 x92 with any questions.

Sincerely,

for Terraphase Engineering Inc.

Kevin Long
Principal Consultant

Nicholas Scala, PG, LSRP
Principal Geologist

KL/NS:cs

Enclosure: PADEP Notification of Release Form (Tank Group 07)

cc: Joseph Jeray (jjeray@hilcoglobal.com)
Stephanie Eggert (seggert@hilcoglobal.com)
Charles Barksdale (cbarksdale@hilcoglobal.com)
Bob Armstrong (rarmstrong@NorthStar.com)
Lisa Strobridge (PADEP – lstrobridge@pa.gov)
Ralph DiPietro (Philadelphia L & I – ralph.dipietro@phila.gov)

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 51 - 33624

☐ **Initial**
☒ **Follow-Up**

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	**North-central Region**	**Northeast Region**
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Philadelphia Refinery Point Breeze
Facility I.D. Number: 51-33624
Street Address (P.O. Box not acceptable): 3144 W. Passyunk Avenue
City: Philadelphia
State: PA
Zip Code: 19141 - 5299
County: Philadelphia
Municipality: Philadelphia
Contact Person: Anne Garr
Telephone Number: (312) 796 - 6564

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Philadelphia Energy Solutions Refining and Marketing, LLC
Address: 111 S. Wacker Dr, Suite 3000
City: Chicago
State: IL
Zip Code: 60606 -
Telephone Number: (312) 796 - 6564
Operator Name: Anne Garr
Telephone Number: (312) 796 - 6564

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☐		☐ [S]	☐ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) Frac Bottoms, Recovered Oil benzene, cumene, tetraethylene glycol	☒	UNKNOWN	☐ [S]	☒ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 08 / 24 / 2022 (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 08 / 24 / 2022 (m / d / y) Office: Southeast Region

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 9 / 1 / 2022 (m / d / y) Municipality: Philadelphia
Date: ___ / ___ / ___ (m / d / y) Municipality: ___

Source (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 006A, 029A, 034A, 035A, 036A, 037A, 046A)	☒	During Closure	☒	Soil	☒
Piping System (Aboveground Regulated)	☒	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Prevention Equipment	☐	Visible Product or Odor Reports	☐	Water Supplies	☐
Submersible Turbine Pump Head/Fittings	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Other (Specify)	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Unknown	☐				

Cause (Mark All That Apply ☒):		
Faulty Installation ☐ Corrosion ☐ Physical/Mechanical Failure ☐ Spill During Delivery ☐ Overfill at Delivery ☐ Vehicle Gas Tank Overfill ☐ Product Delivery Hose Rupture ☐ Accident/Natural Disaster ☐ Other (Specify) _____ ☐ Unknown ☐	Supply Well Sample Results ☐ Monitoring Well Sample Results ☐ Property Transfer ☐ Other (Specify) Site Assessment Sampling ☒ Unknown ☐	

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☐	☐
Free Product Recovered	☐	☐	☐	☒
Water Supplies Identified and Sampled	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) Site Characterization	☒	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: 08 (m) / 24 (d) / 2022 (y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☒ Other (Specify) Site Assessment Sampling Results

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 08 (m) / 24 (d) / 2022 (y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☐ Product Stained or Product Saturated Soil or Backfill
- ☐ Ponded Product
- ☐ Free Product or Sheen on Ponded Water
- ☐ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☒ Other (Specify) Site Assessment Sampling Results

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Work is being performed at the Site in accordance with the Aboveground Storage Tank Closure Work Plan (AST Work Plan) (Terraphase 2021). The PADEP approved the AST Work Plan on April 23, 2021. Pursuant to the AST Work Plan, Site Assessment sampling is being performed in Tank Groups. This notification is provided to PADEP to report that the Site Assessment sampling performed in Tank Group 07 has identified chemical concentrations in soil at levels above applicable Statewide Health Medium Specific Concentrations (MSCs). The following chemicals were detected in soil samples at concentrations greater than the applicable MSCs: benzene, cumene, ethyl benzene, toluene, benzo(a)pyrene and lead. Site characterization will be performed to understand the nature and extent of these concentrations above MSCs and to further assess whether these conditions actually reflect a release to the environment from these ASTs.

This notification is a follow-up to the previous incident reported in Tank Group 07 (Incident #57973). Pursuant to discussions with our PADEP case team, this and any subsequent notifications required in Tank Group 07 will be combined with the incident number #57973.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, Anne R. Garr, Assistant Secretary, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

08 / 25 / 2022
Date

CERTIFIED INSTALLER CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

/ /
Date

Installer Certification Number

Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number